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ABSTRACT

This handbook describes an innovative instructional/innovation model (implemented in an urban school district in the southwestern United States) that represents a promising approach to the education of language minority students. School personnel, parents, and educational planners may use the handbook to assess the appropriateness of the intervention for their schools. Teachers may look to the handbook for explicit advice on implementing the model. Sections of the handbook include: Overview of the Project; The Conceptual Underpinnings: Combining Resources for Instruction; Implementation of the Model; What Do I Do? and Results to Be Expected. A list of contacts and materials available, a 55-item bibliography and list of works cited, and a list of the domains of knowledge in the community are attached. (RS)

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Community Knowledge and Classroom Practice

Combining Resources for Literacy Instruction

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A Handbook for Teachers and Planners

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September 1990

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A Handbook for Teachers and Planners
from the Innovative Approaches Research Project

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Community Knowledge and Classroom Practice

Combining Resources for Literacy Instruction

A Handbook for Teachers and Planners
from the Innovative Approaches Research Project

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Handbook for Teachers and Planners
Community Knowledge and Classroom Practice: Combining Literacy Resources for Literacy Instruction

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PREFACE

This handbook describes an innovative instructional/intervention model that represents a promising approach to the education of language minority students. It is one of four handbooks produced to document and disseminate the findings of the Innovative Approaches Research Project (IARP).

The IARP evolved from concerns about the status of education for language minority students. By the middle of the 1980's, four critical areas were identified: literacy instruction, science/math instruction, dropout prevention, and the instruction of exceptional students. Improvements in those areas were needed to enhance the educational opportunities of language minority students. To gather more timely information and provide models which offered the promise of real sclutions, the U.S. Department of Education, Office of Bilingual Education and Minority Language Affairs (OBEMLA) funded the Innovative Approaches Research Project in September 1987.

The structure of the IARP represents an innovation in the management of federally-funded education research. OBEMLA chose Development Associates, Inc. of Arlington, Virginia to manage and direct the overall IARP effort. Development Associates, in turn, issued a problem statement and solicited collaborators to conduct research and demonstration projects that addressed issues in the four critical areas. Numerous educational research organizations and investigators responded with their ideas and the IARP staff convened peer-review panels to select the most appropriate responses. The projects selected by the peer-review panels were funded by Development Associates to implement the projects in local schools from 1988 to 1990.

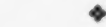
The research collaborators selected to conduct the IARP research and demonstration projects were first asked to identify promising approaches to the education of language minority students in the specific topic areas. Second, they were asked to test the effectiveness of those approaches in actual school settings. Third, they were asked to document the implementation procedures and the outcomes of the approach. Finally, they were asked to collaborate with IARP staff in preparing handbooks and technical materials. The IARP staff is presently disseminating the results of the project and beginning a process of replicating the models.

This handbook *Community Knowledge and Classroom Practice: Combining Resources for Literacy Instruction* provides information about the IARP model for providing literacy instruction to language minority children, which was implemented in an urban school district in the southwestern part of the United States. School personnel, parents and educational planners may use this handbook to assess the appropriateness of the intervention for their schools. Also, teachers may look to the handbook for explicit advice on implementing the model. Therefore, the handbook provides many details about effective strategies and required resources for replicating the model. It also gives clear examples of the instructional strategies used on a day-to-day basis to make classroom teaching effective.

We have also sought ways to make this handbook easy to use. The main text was prepared by the research collaborators and represents their findings. The document is structured so that an interested reader may grasp the essential aspects of the model by reading the overview and major features section. Practitioners might wish to pay special attention to the "What Do I Do?" section. In the concluding sections, the research collaborators note the results that schools might expect if the project were

replicated and they also provide the names of resource people. In addition, the researchers have provided detailed bibliographical citations within the text and in a supplementary bibliography at the end of the volume.

Complementing the collaborator's text, the IARP Development Associates' staff has written the margin notes to help guide readers through the material. These margin notes are designed to orient readers through the text and provide a narrative thread for readers who are perusing this material for the first time.



Several groups of people are responsible for the accomplishments of the IARP. First, I would like to thank the OBEMLA staff for their vision in designing the IARP and for the opportunity to implement the project. Without the technical expertise and support of OBEMLA staff including the Director of OBEMLA, Rita Esquivel; the Director of Research for OBEMLA, Carmen Simich-Dudgeon; the IARP Project Officer, Alex Stein; as well as the Grants and Contracts Officers Jean Milazzo, and Alice Williams, the project would never have fully enjoyed the success it does today. Credit needs also to be given to Warren Simmons, the first IARP project officer, who conceived this highly innovative project.

Next, I would like to extend appreciation to the IARP Development Associates staff and project associates — Peter Davis, President; Malcolm Young, Corporate Officer-In-Charge; and Paul Hopstock and Annette Zehler, Associate Project Directors. Bonnie Bucaro, Research Assistant to the IARP has provided critical assistance and support. Richard Ottman, Teresa Crumpler, Loretta Johnston, Allan Kellum, Howard Fleischman, and Mark Morgan supplied expertise at critical times during the project. A special thanks to Richard Duran, Professor at the University of California, Santa Barbara; Walter Secada, Director of the MRC at the University of Wisconsin, Madison; and Joel Gomez, Director of the National Clearinghouse for Bilingual Education, who provided sharp insights, expert advice, and guidance. The project continuing reviewer, Margaret Steffensen, an Associate Professor in the English Department at Illinois State University, spent many hours providing us with helpful and thought-provoking suggestions, and I would like to thank her as well. Richard Moss provided valuable editorial assistance and graphic design ideas for the IARP products.

Finally, many thanks to the Community Knowledge and Classroom Practice Principal Investigators Luís Moll, Carlos Vélez-Ibáñez and James Greenberg. For their sharp insights, a special thanks to the research collaborators who collected data in the homes and worked with the teachers in the schools: Rosi Andrade; Joel Dworin; Douglas Fry; Elizabeth Saavedra; Javier Tapía; and Kathy Whitmore. Making the school community aware of the rich community knowledge and resources was an effective approach to increasing literacy skills of language minority students. I would also like to acknowledge the support of the school principals and the teachers. Finally, I applaud the students, parents, and community for their commitment to sharing their abundant resources.

Charlene Rivera
Development Associates, Inc.
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September 1990

INTRODUCTION

The Need for Innovative Approaches

The proportion of school-age children in the United States who come from non-English language backgrounds has increased substantially over the past several years. As a result, a large number of students enter our nation's schools each year with limited oral and written communication skills in English. The provision of effective instruction to these language minority students is one of the most critical challenges confronting today's schools (Lara and Hoffman, 1990).

This challenge comes at a time when schools are in the midst of instructional reform aimed at meeting educational demands imposed by the social, economic, and technological changes that have occurred in the decade of the eighties. Competition from abroad and the occupations created by new advanced technologies have created demands for higher achievement in science and math. Structural shifts in the economy, along with technological advances in computer and electronic automation, have altered the nature of the job market and increased the importance of literacy in the workplace. The implications of these changes are that many of those without adequate skills will have difficulty obtaining and keeping jobs in the years ahead (U.S. Equal Employment Opportunity Commission, 1986).

Schools today thus face enormous pressures to raise standards and to change the objectives of schooling in ways which incorporate activities and content designed to develop oral and written communication skills and critical thinking skills. Evidence suggests that reforms introduced in the 1980's to meet these ends are beginning to have an impact. However, there is rising concern that the school reform movement may serve to widen the already substantial gap between the achievement of majority students and those from minority groups unless special steps are taken (McPartland and Slavin, 1990). In response to this concern, a renewed emphasis is being placed on strengthening programs serving language minority students whose academic progress is jeopardized by their economic status and/or conflicts between the language and culture of the schools and the one found in the home and community.

The Response: Innovative Approaches Research Project

In responding to the need to strengthen instructional programs for language minority students, the U.S. Department of Education identified four critical target areas: literacy instruction, science/mathematics instruction, dropout prevention, and the instruction of exceptional students. It contracted Development Associates, Inc. of Arlington, Virginia to direct a comprehensive project, known as the Innovative Approaches Research Project (IARP), which would address each one of the critical areas through four separate research and demonstration projects. The four projects were:

- Community Knowledge and Classroom Practice:
  Combining Resources for Literacy Instruction;
- Cheche Konnen:
  Collaborative Scientific Inquiry in Language Minority Classrooms;
- Partners for Valued Youth:
  Dropout Prevention Strategies for At-Risk Language Minority Students;
- AIM for the BESt:
  Assessment and Intervention Model for the Bilingual Exceptional Student.

Although each of these projects was implemented in a specific school setting and with a specific language minority population, it was expected that an individual model and/or its component parts would be generalizable to other settings and applicable to language minority and non-language minority students in other communities. In order to help ensure that the results of the IARP projects would be replicable, both the research and the demonstration aspects of each project were carefully documented, focusing on how the insights gained might be used to implement the innovative models in other settings and with different populations.

The IARP research and demonstration projects were significant in that not only was each project based on a firm theoretical framework, but the implementation of each project was a collaborative effort involving researchers, administrators, and teachers who worked together in the classrooms and schools and who jointly shaped the refinements in the processes and procedures of the individual models. For this reason, the research and demonstration phase of the projects was particularly informative and led to important insights about effective instructional approaches for language minority students.

Interestingly, in reviewing the findings of all four IARP models, it became clear that despite the diversity of approaches and differences in focal areas, there was considerable commonality among the models. The common themes that became evident concern the importance of the organization of schooling, the value of teaching and learning approaches that restructure the traditional teacher/student relationships, and the importance of presenting language minority students with challenging content that is relevant to their experience and needs. Each model, as a specific example of these common themes, presents challenging ideas about more effective ways to structure schooling and the teaching/learning process.

This handbook presents Community Knowledge and Classroom Practice: Combining Resources for Literacy Instruction. Below, as an introduction to the handbook, we provide a brief outline of the Community Knowledge model, followed by an overview of the common themes and approaches in the IARP models. In the discussion, we refer to aspects of the Community Knowledge model to exemplify some of the general themes and approaches being described.

Community Knowledge's Approach to Literacy Instruction

Literacy instruction has become responsive to the new demands imposed by the recent societal shifts toward greater technological sophistication and toward increased requirements for critical thinking and problem-solving skills. Today, literacy has come to stand for a range of skills that are necessary for an individual to interact effectively with others in a technologically-oriented society.

For language minority students, the issue of developing English literacy skills is especially complex. These students enter classrooms with varying backgrounds in their first language, with differing abilities in English, and with varying home language backgrounds. Furthermore, the school culture may make erroneous presumptions about the literacy background of language minority students. To put it simply, schools may view language minority children as coming from a "culture of poverty" or having a deficiency which must be remedied. Such presumptions and their effect on teaching strategies may well become an impediment to language minority students striving to learn English.

However, the best contemporary instructional practice draws from the culture and background of the students in fashioning a strategy for teaching literacy. Community Knowledge exemplifies this new direction in literacy instruction. In contrast to the tasks in traditional language arts classrooms, Community Knowledge students drew upon a repertoire of knowledge from the community — called "funds of knowledge" by the research collaborators. They were able to do this in the classroom because the researchers had previously inventoried the skills, knowledge, and resources which existed in the community. The researchers had then collaborated with teachers and encouraged them to develop a curriculum which was more responsive to the students' cultural and language environment.

The Community Knowledge approach to literacy teaching suggests that an ethnographic approach to literacy teaching may be appropriate for all students, language minority and non-language minority. Many students who are not achieving at their potential may benefit by use of a curriculum which does not isolate school from community but which is more relevant to the family and community experiences of the students.

The Community Knowledge model worked because it made sense to the people who used it. The research collaborators created an environment in which teachers could think about and reflect on their own educational practice. It was the teachers who recognized that their current practices were not working as well as they would like and it was the teachers who developed the changes.

Common Themes and Approaches in IARP Models

In reviewing the findings of all four IARP models, the common themes that were found pointed up the importance of the organization of schooling and emphasized the value of instructional approaches and interventions that restructure the traditional teacher/student relationships and the definition of classroom instructional content for language minority students. The common themes identified in the four models involve emphases on:

- the need for restructuring schooling to open up communication within the school community;
- the value of using participatory and cooperative teaching and learning approaches; and,
- the importance of providing instructional content that is challenging and that is culturally and personally relevant to students.

To persons familiar with the educational literature, these kinds of emphases are not all new; they reflect several issues and approaches that have received much discussion. However, the importance of the IARP models lies in the fact that program elements representing a specific and unique integration of these emphases were found within each of the models. Each model, as a specific example of these common themes, presents challenging ideas about more effective ways to structure schooling and the teaching/learning process. It is in these aspects that the IARP has fulfilled its goal of identifying innovations that can be used to successfully address the needs of language minority students. Thus, the common themes outlined below offer an important introduction and context to the handbook description of the Community Knowledge model.

Restructuring Schooling

Throughout the implementation of the IARP research and demonstration projects, typical boundaries that existed within schools were crossed or broken down. The resulting increase in communication and collaboration

among all school staff and in particular among those staff serving language minority students was an important factor in the success of the models. These innovations involved the restructuring of the schooling process. With regard to classroom practices in particular, the restructuring of schooling relates to:

- the relationship between the process of collaboration and innovative practices; and,
- the relationship between innovative practices in the classroom and traditional instructional policies.

And, with regard to school organization, the restructuring of the schooling-process involved changes in:

- the relationship among schools and among classrooms within a school; and,
- the relationship between schools and communities.

The restructuring of these relationships carried out within the models led to significant changes in classrooms and ultimately to the changes observed in students' attitudes and performance.

Relationship Between the Process of Collaboration and Innovative Practices

All four of the IARP models included a new, expanded role for teachers in which teachers worked together to develop and to in fact define the specific application of the innovative model in their classrooms. That is, while typically teachers have been trained to function very independently, in the IARP models teachers collaborated with each other and with the researchers to work through and test ideas for working with their students.

The process of collaboration was actually an integral part of the innovative practices demonstrated by the models and played a significant part in their success. Collaboration gave teachers a forum in which they could voice their ideas for innovation and find mutual support and assistance in working out these ideas; the approach both made teachers themselves more receptive to change and created a strong base for change within the school.

In Community Knowledge and Classroom Practice teachers worked collaboratively, supporting each other in the development of innovative methods in their classroom and sharing in problem-solving. The teachers in the after-school study group gradually learned to share ideas and to work as a team in devising better ways to address the needs of their students; at the same time they began to share the excitement of creating together new, more effective approaches for their classrooms.

Relationship Between Innovation and Traditional Instructional Policies

The IARP models also broke down walls constructed around teachers by school policies or common practices and by traditional training. Educators working on the IARP models were challenged to rethink what teaching is about, how they approach students, what role the established curriculum should have, and how school policies affect the teaching/learning process.

For each IARP model there was initially some resistance to the changes in common practices that were required in implementing the new model. However, in each case, the results and student outcomes of the innovative practices justified the changes and convinced others of the value of the new instructional approaches or interventions.

In Community Knowledge the teachers participating in the after-school laboratory became more confident in trying out the new instructional approaches and grew "re-invigorated" by the challenge. At the same time these teachers, who were also taking graduate education courses, found that the study group gave them an opportunity to reflect on the knowledge they were acquiring through their formal education coursework.

Relationship Among Schools and Classrooms

The IARP models defied traditional ways of thinking about schools and classrooms. Teachers from different schools seldom interact with one another, and within schools it is generally the case that teachers work in isolation. Within the IARP models, these traditional structures were changed.

Community Knowledge, for example, established the after-school laboratory for teachers where teachers could meet with each other, share ideas about teaching, and learn from each other. The research collaborators contributed their own instructional philosophies, but did not direct the group in any specific way. Instead, the interaction among the teachers broke down the usual tendency toward isolation in which each teacher independently addresses problems or tries to create innovations. The teachers in the study group began to draw on each others' resources and gained support and guidance from the other members of the group. Where teachers might not have felt confident enough to initiate changes in their classrooms before, the support of the study group gave them the encouragement and assistance they needed to make the changes they felt their classrooms needed.

Relationship Between Schools and Communities

In general, few genuine attempts have been made to build a bridge between the culture of schools and the culture of the community from which students come (Heath, 1983; MIT, 1990). IARP instructional models recognize that schools must have a link to the real world in order to be meaningful to students.

This is a fundamental principle in all of the IARP models, but was perhaps made most explicit within Community Knowledge. Teachers implementing the intervention drew on information gained from the findings of the ethnographic study of some twenty-eight households. Through the after-school study group, the teachers supported one another in experimenting with a meaning-centered model of literacy that drew on the understanding of how literacy is used in the home and in the community.

Teaching and Learning Approaches in the IARP

The IARP interventions also shared similar approaches to teaching and learning. While the exact mix of approaches and the specific forms they took in implementation were different for each model, all four of the IARP models made use of a combination of participatory teaching and cooperative learning approaches. That is, in each case the research collaborators arrived at the same conclusions: First, effective teaching involves teachers and students in meaningful learning tasks that are relevant to the individual student's experience. Second, effective learning activities involve students in cooperative work where they assume responsibility for their own learning.

Participatory Teaching/Learning

A key feature of instruction found in each of the four IARP research and demonstration projects was an approach to teaching that encourages students to actively participate in learning activities. For the language minority student, participatory learning is important because it (1) acknowledges that individuals learn in many different ways; (2) allows students to frequently practice and use their developing English and other language skills; (3) provides teachers with important feedback on student problems and achievement; (4) allows students to integrate their unique cultural and personal perspectives; and (5) generally improves student motivation and attention.

In Community Knowledge students were encouraged to become active learners; through the literacy activities the students developed literacy skills as a tool for communicating and thinking within the context of socially meaningful tasks.

Cooperative Learning

Cooperative learning is a method of instruction that is student-centered and that creates interdependence among students, involving them in face-to-face interaction, while maintaining individual accountability. In classrooms where cooperative learning is utilized, students work jointly to accomplish an academic task, solve problems, or resolve issues. Cooperative learning can take a number of forms, such as peer tutoring, group projects, class presentations, etc. Cooperative learning within the IARP research and demonstration projects reflected the belief that teachers and students have considerable resources to offer each other and that those resources should be effectively used in the teaching/learning process.

Cooperative learning has been shown to be an effective pedagogical tool and is particularly appropriate for language minority students, many of whom come from cultural groups where cooperative approaches are highly valued (Cochran, 1989; Jacob & Mattson, 1987; Kagan, 1986; Solis, 1988). The advantages for language minority students are: (1) high levels of interaction and communication are required, stimulating students to productively use cognitive and oral English language skills; (2) students with heterogenous knowledge and skill levels help one another to meet lesson goals; (3) student self-confidence and self-esteem can be enhanced through individual contributions and through achievement of group goals; and (4) individual and group relations in the classroom may be improved.

The Community Knowledge model made extensive use of cooperative approaches. One teacher in particular extended a cooperative environment throughout the class' instructional day. In her "Sunshine Room," various sections of the room were set aside for cooperative activities through which students learned to collaborate in story-telling, in writing, and in researching a variety of topics.

The Content of Instruction for Language Minority Students

In the IARP models, the revisions in the instructional approaches used also incorporated important changes in the content of instruction presented to the students. First, implementation of the innovative approaches implied shifts in the curriculum toward more challenging levels of work. And second, the innovations also included a focus on making instructional content more relevant to the cultural background and personal experiences of students.

Challenging Level of Instructional Content

Frequently, the content of instruction provided to language minority students is reductionist and instructional activities are focused on lower order skills such as rote learning. However, lack of full proficiency in English does not and should not limit students to learning only content that requires lower order thinking skills. The example of the IARP models showed that when teachers have high expectations and present academic tasks that are complex and challenging, students become more engaged in and challenged by their learning, and instruction begins to tap their true potential for learning.

Presenting challenging content to students is a reflection of high expectations held regarding the students' abilities. In Community Knowledge, students were challenged by the presentation of new responsibilities in their classroom activities. Students were called upon to take more initiative in their learning, to work with others in achieving academic goals that they had helped to set, and to be individually accountable for their contributions.

Culturally-Relevant Learning

A second common characteristic of instructional content within the IARP models was that instruction was consistently grounded in the personal and cultural experiences of students. Some of the benefits of such culturally relevant instruction are (Kagan, 1986; Tikunoff et al., 1981; Cazden & Legget, 1981):

- it works from the basis of existing knowledge, making the acquisition and retention of new knowledge and skills easier;
- it improves self-confidence and self-esteem of students by emphasizing existing knowledge and skills;
- it increases the likelihood of applying school-taught knowledge and skills at home and in the communities represented by the students; and,
- it exposes students to values, information, and experiences about other cultural and language groups.

While traditionally there have been obstacles to integrating personally and culturally relevant teaching styles and materials into the classroom (e.g., lack of materials, lack of information, impracticality when several cultural groups are present in a class, etc.), the IARP models provided strategies for overcoming some of these by emphasizing the important interrelationships among home, school, and community.

In the Community Knowledge model the issue of culturally relevant learning was approached in a direct way. "Funds of knowledge" drawn from the community—and, in fact, the carriers of these funds, i.e., the parents and other members of the community—became a resource for learning. The use of these sources of knowledge sent a message to the students that their cultural heritage and community life were important within the school context and were fit objects for study and reflection.

Summary

The outcomes of the two years of research and demonstration of the IARP models are significant in two ways. First, each innovation was demonstrated to have a positive impact on students and, importantly, on the classrooms and schools involved as well. Thus, each of the IARP models provides a specific example of effective instruction/intervention for use in schools with language minority students.

Second, the findings of the IARP models taken together argue for important general changes in schools and classrooms in order to make schooling more effective. These are changes that involve the structure and organization of the school, the teacher/student relationship and instructional approaches used in the classroom, and the type of instructional content presented to students.

This handbook outlines the implementation of Community Knowledge and Classroom Practice, the IARP model focused on literacy instruction. The handbook offers guidance for those who are interested in implementing the model and outlines the types of outcomes that might be expected from the use of the model. In addition, the last section of the handbook provides further sources of information on the model and its findings.

For literacy to function as an intellectual resource, it must involve learning the means to exploit the resources of a literate culture including its literary, religious, scientific, philosophical and governmental resources....to become literate is to gain access to the valued resources of the culture. Learning how to understand and exploit these resources is something that begins long before children enter schools, yet schools are the primary means at the society's disposal for making those resources broadly available

— David Olson, 1987

The Problem and the Challenge

It is generally accepted that Hispanic (and other) working-class students, especially those whose first language is Spanish, are at-risk educationally. Usually the label of "at-risk" means two things: that there is a high drop-out rate among this group of students, and that the educational attainment of those who stay in school is low (see, e.g., Steinberg, Blinde, & Chan, 1982). Explanations of these students' school performance usually assume that they come from socially and intellectually limiting family environments (limitations in the students' "funds of background experience," as one researcher called it), or that these students lack ability, or that there is something wrong with their thinking, especially in comparison to wealthier peers.

What often goes unexamined in these discussions is the type of instruction that these students usually encounter in school. What is the nature of instruction for working-class students? As several researchers have pointed out instruction for these students can be summarized as rote drill and practice, and intellectually limited—with an emphasis on low-level literacy and computational skills (see, e.g., Anyon, 1980; Oakes, 1986; also see Goodlad, 1984). This reduction of the intellectual level of the curriculum is especially marked when the students are not fluent in English. The tendency then is to reduce the curriculum's level of complexity to match the students' real or perceived level of English language fluency. In a sense, the assumption is that these students cannot learn until they are fluent in English. What the readers should keep in mind is that these reductions of the curriculum are systemic; they are not the exception but the rule; in fact, they are part of the political connections or relationships between society and schools (see, Spring, 1989).

Important for our present purposes is that assumptions about students' limitations, especially the belief that these students arrive in school with social, cognitive and linguistic deficits, seem to be matched by the way that teachers (and administrators) define and organize classroom instruction and, as such, structure what these students are asked to do with literacy. Cole and Griffin (1987) have captured the consequences of such an emphasis:

> ...a continued imbalance in the educational mandates that guide the education of minorities and of white middle-class children deepens the problem: as schools serving minority children focus their resources on increasing the use of well-known methods for drilling the basics, they decrease the opportunities for those children to participate in the higher level activities that are needed to excel in mathematics and science (p. 5).

In terms of literacy instruction, these rote practices stand in sharp contrast to the recommendations of recent studies of effective literacy and language learning. These studies consistently point out the importance of students interacting frequently, purposefully, and meaningfully with language and text (see, Edelsky, 1986; Farr & Daniels, 1986; Wells, 1986).

How can we help develop meaningful literacy instructional practices with these students? What resources could we use to extend instruction beyond the limits of rote or low level skills-based practices? Our approach combines two lines of research emphasizing the social and cultural bases of learning. On the one hand, we draw on studies that relate and integrate knowledge about students' home and community practices into improvements in classroom instruction (see, e.g., Gallimore, 1985; LCHC, 1986). These studies show that, properly used, social and cultural practices can serve as powerful resources for the children's schooling, especially for

Margin Notes

The researchers note that after language minority students are labeled "at risk" a stereotypic set of assumptions are made about them. When language minority students are at risk, the underlying cause is likely to be the educational setting in which they learn. Often, instruction for language minority students proceeds from low expectations about the students' ability coupled with a lack of information about robustness of the home background.

Here the researchers provide suggestions for reading about the social and cultural basis of learning.

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the development of literacy. But as Gallimore (1985) has suggested, cultural practices are not rigid and inviolate models of teaching and learning that must be copied wholly in classrooms, but are a source of ideas. We agree. As part of this chapter we will report on an analysis that helped us re-define the students' households as important social and cognitive resources for literacy instruction.

In studying how to apply these resources in practice we have also drawn on recent theoretical and practical developments emphasizing the importance of an interactive, meaning-based teaching of literacy (see, e.g., Goodman, 1986; Graves, 1983; Moll, 1988; Wallace, 1989). These "participatory" approaches highlight children as active learners using and applying literacy as a tool for communication and for thinking. The role of the teacher, which is critical, is to enable and guide activities that involve students as thoughtful learners in socially meaningful tasks. Of central concern is how the teacher facilitates the students' "taking over" or appropriating the learning activity. As Langer (1987) has suggested, "As learners assume ownership for their literacy activities...they are in a sense learning to master themselves — they gain control of their own abilities as literate thinkers and doers, using language to serve their own needs" (p. 7). Our project, therefore, was designed to facilitate a critical re-thinking of common and limiting assumptions about the students and their families, and about how we go about teaching language minority students.

The authors note additional readings about participatory approaches to teaching—ones in which the students are active learners.

Overview of the Project

The central premise underlying this project is that every household has "funds of knowledge" and that these funds are valued resources of the culture. The households of language minority and working class families are potentially a vital cognitive and social resource for the teacher.

During the past two years we have presented our study in many conferences and classes, including presentations to teachers from different regions of the country and from other countries. Invariably, there are two aspects of our work that attract the most attention, especially from teachers. One is our analysis of what we term households' "funds of knowledge": the essential bodies of knowledge and information that households use to survive, to get ahead, or to thrive. We have studied how these funds of knowledge originate and how they are socially learned and shared within and among households. In contrast to most classrooms, which function as self-contained or enclosed units, households never function in isolation; they are always linked to other households through social ties or networks that facilitate, among other important functions, the exchange of knowledge.

We have also documented the breadth of this knowledge. We challenge the commonly held view of Latino and other working-class households as somehow lacking knowledge or intellectual vitality. Our perspective facilitates a positive view of these households as containing ample social and cognitive resources with great potential utility for classroom literacy instruction. As part of this chapter, we will urge teachers to consider household funds of knowledge an essential valued resources of the culture whatever the children's cultural background. We will also urge teachers to consider how to use or mobilize existing funds of knowledge within their own classrooms. Ultimately, it is the teachers and students themselves that must create the classroom conditions to understand and exploit these resources as part of their literacy practices (see Domains of Knowledge in the Community, p. 55).

A second aspect of our work that teachers respond to with great interest is our insistence on the importance of developing after-school settings (which we've called "labs" or study groups) in support of classroom teaching. We contend that teachers need a setting where they can help each other think; where they can analyze their teaching and the teaching of

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others, evaluate new ideas about instruction, and identify resources to use in teaching, be it from the households, the communities, or from their own schools or classrooms. For these purposes, we developed a setting where teachers and researchers met to analyze literacy instruction, exchange information, and provide support for introducing practical innovations. It is a place where teachers have voice and control, where they can assist each other with their work (for similar ideas, see Berliner, 1985; Tharp & Gallimore, 1989).

The authors note that a first step in fostering a climate for innovation is the creation of an after-school lab which serves the interests and needs of teachers and is largely controlled by them.

The development of such settings or study groups is our basic recommendation for teachers or administrators who are interested in applying our ideas elsewhere. However, we are convinced that the term "replication" is a very misleading metaphor. It implies, erroneously from our point of view, that all one has to do is copy someone else's work or follow a set of prescriptions that will lead to success. This approach ignores the importance of the dynamics of local issues and contexts in influencing how one works, what Goldenberg and Gallimore (1990) call the importance of local knowledge. A better choice of terms than replication would be "re-invention." It implies that one can borrow ideas from elsewhere but that one must apply those ideas anew by taking into account the specifics of local settings. Participants in each setting must re-invent the innovations to fit specific local concerns and contexts.

Any process of innovation will ultimately depend upon teachers' owning the process and defining the problem in ways that are meaningful to them.

Central to this re-invention (and re-contextualization) is the thorough involvement of teachers. No innovation has a realistic chance of succeeding unless teachers are able to express, define, and address problems as they see them—unless teachers come to see the innovation or the change as their own. Admittedly, this process takes a good deal of effort and is time consuming. We offer no easy recipes for teaching since we are dealing with the complexities of schooling. From our perspective, the ultimate outcome of an innovation (or of a re-invention) depends on how teachers become part of the decision and process to initiate change. One important way to facilitate such serious teacher involvement, as we propose, is through the development of study groups.

Both the household analysis and the close collaboration with teachers have helped shape what is a central theme in our work: the importance of understanding the social and cultural conditions under which people use literacy to create meaning, whether in households or in classrooms. This socio-cultural approach with its focus on the practices of literacy has definite implications for instruction, as Resnick (1990) has recently explained:

> The shift in perspective from personal skill to cultural practice carries with it implications for a changed view of teaching and instruction. If literacy is viewed as a bundle of skills, then education for literacy is most naturally seen as a matter of organizing effective lessons: that is, diagnosing skill strength and deficits, providing appropriate exercises in developmentally felicitous sequences, motivating students to engage in these exercises, giving clear explanation and direction. But if literacy is viewed as a set of cultural practices then education for literacy is more naturally seen as a process of socialization, of induction into a community of literacy practicers (p. 171, emphasis in original).

Creating the conditions for this socialization into literacy, helping children actively engage in meaningful literacy practices as part of a classroom community, is the main topic of our classroom analysis. Rather than provide a general narrative or summary about this work, we have opted to present specific case studies of two teachers' classrooms and an

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Having addressed theoretical issues in the preceding paragraphs, the authors note that the handbook will be organized around a descriptive analysis of three case studies. Two case studies focus on classrooms while a third describes the interaction among teachers in the after-school lab. The participating teachers helped develop these case studies.

example of the after-school setting in action. It is this connection between what happens in classrooms and the teachers' discussions and analysis of their practices that is at the heart of our project. We note that these case studies were developed with teachers, and represent an attempt to communicate to other teachers (and other educators) not only the essence of our ideas but how instruction happened in the classrooms. In each case study we emphasize organizing lessons or activities that help students make meaning through literacy. We tried to provide enough information so that a teacher reading this chapter can compare our work and contexts of instruction with his or her classrooms and reach individual conclusions about the utility and feasibility of what we propose.

The Conceptual Underpinnings: Combining Resources for Instruction

This project simultaneously studied household and classroom life and collaborated closely with teachers to develop implications for the teaching of literacy. The design of the project consisted of three main, interrelated activities: (1) an analysis of the use and communication of knowledge and skills within and among households in a Latino community in Tucson, Arizona; (2) implementation of an after-school site where researchers and teachers examine classroom practices, and use local resources to experiment with literacy instruction; and (3) classroom observations in which we examine existing methods of instruction and explore how to change instruction by applying what's learned at the after-school site. We now summarize our work within each component and elaborate on the teachers' efforts and on the implications for the students' uses of literacy within the classrooms. We refer the reader to other reports and articles for more thorough information about our household analysis (see, Greenberg, 1989; Moll & Greenberg, 1990; Moll, Vélez-Ibáñez, & Greenberg, 1989; Vélez-Ibáñez, 1988).

The project has three elements: analysis of the use of knowledge and skills within the community, creation of an after-school environment for exploring classroom practice, and observation of classrooms and analysis of changed teaching strategies.

Households Are Repositories of Knowledge

Particularly important in our work has been our analysis of households, how they function as part of a wider, changing economy, and how they obtain and distribute their material and intellectual resources through strategic social ties or networks (Vélez-Ibáñez, 1988). We present two aspects of our household findings with important implications for the study and the teaching of literacy: the nature of these networks and the social exchange of knowledge. Households, in contrast to many classrooms, never function alone or in isolation: they are always connected to other households and institutions through diverse social networks. In our sample of primarily Mexican, working-class families, these social networks function to facilitate the exchange of resources among households. In particular, these networks facilitate different forms of economic assistance and labor cooperation that help families avoid the expenses involved in using secondary institutions, such as plumbing companies or automobile repair shops. For families with limited incomes, these networks are a matter of survival. They also serve important emotional and service functions, providing assistance of different types, most prominently in finding jobs and in assisting with child-care and rearing so that mothers may enter the labor market. In brief, these networks form social contexts for the transmission of knowledge, skills, information, and assistance, as well as cultural values and norms (Vélez-Ibáñez, 1988; Greenberg, 1989).

The authors note the inter-relatedness of social networks in working class and language minority communities. Rooted in economic need and survival strategies, households build funds of knowledge which are shared by members of the community. This sharing decreases the need for community members to rely on secondary—commercial—institutions in the dominant economy.

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In terms of our analysis, the most important function of these social networks is that they share or exchange what we have termed "funds of knowledge." A brief example would help clarify what we mean:

> Juan's car is not working right and he needs it fixed, but he knows next to nothing about engine repair. He calls his friend Carlos, who was a mechanic in the Army, and who lives a few blocks away, invites him to lunch on Saturday, and mentions that he could use some help with his car. Carlos comes over on Saturday, has lunch, and helps fix Juan's car, in the process teaching Juan a bit about engine maintenance and repair. Thus, Carlos has not only shared his labor with Juan but his knowledge about automobile repair. A few weeks later Carlos calls Juan, who is a student at the university, and during the conversation tells him that his (Carlos') young son is having problems with math in school. Juan mentions that he has a friend who majors in math and might be able to help the boy. They agree to get together that weekend and introduce the youngster to Juan's friend.

The funds of knowledge are likely to be related to a household's historical position in the community with respect to the kinds of labor it is capable of performing.

We refer to the knowledge exchanged through these types of social ties or networks as funds of knowledge. Greenberg (1989) has referred to funds of knowledge as an "operations manual of essential information and strategies households need to maintain their well being" (p. 2).

What is the source of these funds of knowledge? Our analysis shows that funds of knowledge are related to the social and labor history of the household members and the participants in the networks. With our sample much of the knowledge is related to the households' rural origins and, of course, current employment or occupation. Consider the following example drawn from one of our case studies (names are pseudonyms) (Moll & Greenberg, 1990):

> The Aguilars and the Morales are typical cross border families with rural roots, part of an extended family—Mrs. Aguilar is Mr. Morales' sister—that came to Tucson from the northern Sonoran (Mexico) towns of Esqueda and Fronteras. The Morales had a parcel of land on an ejido. Mr. Aguilar's father had been a cowboy, and had worked on a large ranch owned by the descendants of a governor of Sonora in the 19th century. Like his father, Mr. Aguilar is a cowboy. Although he worked for a time in construction after coming to the United States, he is currently employed on a cattle ranch near Pinal, Arizona where he spends five to six days a week, coming home only on Tuesdays. Like Mr. Aguilar, Mr. Morales initially found work in construction, but unlike his brother-in-law, he eventually formed his own company: Morales Patio Construction. This family business also employs his son as well as his daughter-in-law as their secretary/bookkeeper. Nevertheless, the Morales' rural roots remain strong, even idealized. In their backyard, the Morales have recreated a "rancho" complete with pony and other animals. Moreover, the family owns a small ranch north of Tucson which serves as a "recreation center" and locus for learning. They take their children and grandchildren not just to help with the chores, running the tractor, feeding animals, building fences, but more importantly to teach them the funds of knowledge entailed in these old family traditions which cannot be learned in an urban context.

The example of the Morales family points to the rural origins of many of the families who were part of the project.

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Also consider the next example, from a family with an urban background (from Moll & Greenberg, 1990):

The Zavalas are an urban, entrepreneurial family which is active in the service sector of the local economy. Even the pre-adolescent children establish small businesses.

> The Zavalas are an urban working class family, with no ties to the rural hinterland. They have seven children. Their eldest daughter, however, no longer lives at home, but with her boyfriend and son. Mr. Zavala is best characterized as an entrepreneur. He works as a builder, part-time, and owns some apartments in Tucson and properties in Nogales. Mrs. Zavala was born in Albuquerque, New Mexico, in 1950 but came to Tucson as a young child. She left school in the 11th grade. Mr. Zavala was born in Nogales, Sonora in 1947, where he lived until he finished the 6th grade. His father too was from Nogales. His father had little education, and began to work at the age of 9 to help support the family. His family, then, moved to Nogales, Arizona where he went to school for another two years. When he was 17, Mr. Zavala left home and joined the army, and spent two years stationed on military bases in California and Texas. After his discharge, he returned to Nogales, Arizona and worked for a year installing television cable and installing heating and cooling ducts. In 1967, Mr. Zavala came to Tucson, first working as a house painter for six months, then in an airplane repair shop where he worked for three years. In 1971, he opened a washing machine and refrigerator repair shop, a business he had for three years. Since 1974, Mr. Zavala works in construction part time, builds and sells houses, and he owns four apartments (two of which he built in the backyard of his house).
>
> Everyone in the Zavala's household, including the children, is involved in informal sector economic activities to help the family. Juan, for example, who is in the sixth grade, has a bicycle shop in the back of the house. He buys used bicycle parts at the swap meet and assembles them to build bicycles, which he sells at the yard sales his family holds regularly. He is also building a go-cart, and says he is going to charge kids 15 cents per ride. His sisters, Carmen and Conchita, sell candies that their mother buys in Nogales to their schoolmates. The children have used the money they have earned to buy the family a video recorder.

A wide range of skills and knowledge are known in the community and there is considerable exchange among members through strategically developed social ties.

The knowledge and skills that such households possess is extensive and the potential power of these social networks in making these resources, intellectual resources, available to classooms is truly formidable. To make the point, we have culled from our household data all information about the knowledge available among 30 families in our sample, including the Morales and Zavala families mentioned above. We then organized this information into several categories to illustrate the extent of knowledge available in these working-class households and social networks. (A list of these knowledge domains appears as an appendix following page 53.) As can be seen, we have visited families that know about different soils, cultivation of plants, seeding, and water distribution and management. Others know about animal husbandry, veterinary medicine, ranch economy, and mechanics. Many of the families know about carpentry, masonry, electrical wiring, fencing, and building codes; to maintain health, often in the absence of doctors, some families employ folk remedies, herbal cures, midwifery, and first aid procedures. And the list goes on. Needless to say, not every household in our sample possesses knowledge about all of these matters. But that is precisely the point. It is unnecessary for individual persons, households, or classrooms to possess all this knowledge. When needed, such knowledge is available and accessible through social networks of exchange.

By implication, this knowledge could become the locus of teaching in classrooms.

Clearly, the idea that these families are somehow devoid of abilities and skills is simply erroneous. The common view that their children suffer from a deficit of "funds of background experience" is seriously challenged by our work. From our perspective, these families represent a major social and intellectual resource for the schools. The extent of their funds of knowledge justifies our position that the community needs to be perceived by others, especially educators, and probably by the community itself, as having strength or power, as having resources that schools cannot ignore.

In an important sense, the schools are in an analogous situation to the households we are studying. All schools consider that they need more resources in addressing the needs of students, especially if these students are minority children and from poor neighborhoods. It is common for teachers to bemoan the scarcity of resources. Dealing with scarcity of resources, however, is an everyday issue in the households. The exchange of funds of knowledge, as we have explained, is a major strategy to deal with the lack of resources, a strategy developed to harness, control and manipulate resources. The idea is to do the most with what you have.

A Laboratory for Teachers to Share Innovative Ideas

We were also fully aware, however, that household resources become pedagogically useful only through the work of teachers. For these purposes we created an after-school setting with teachers to analyze instruction and to develop innovations in the teaching of literacy. This after-school setting represents a social context for informing, assisting, and supporting teachers' performances where they could develop their own supportive network. Initially we sought to develop a place to discuss with the teachers the information we were obtaining about the households' funds of knowledge.

A weekly meeting fostered the formation of new social relationships among the teachers and led to the exchange of ideas and resources within the group—much like the household networks we were studying in the community. On the average, ten teachers met once a week for approximately two hours with two members of the research team, who were teachers getting advanced degrees. Principals were invited to the meetings and one did attend periodically. We would, however, recommend four to six teacher-members as an optimal size for a group.

We used the group to address the teachers' interests and concerns within their specific classrooms. The teachers assessed what they wanted to change in their classrooms, read articles about literacy instruction and teachers who were already conducting more "participatory" lessons offered suggestions and advice.

We see the after-school lab as an activity setting where teachers and researchers get together to study teaching (how teachers teach and why they teach the way they do), to learn about the households, about each other, and to develop instructional innovations. Through the work in these groups we understood better the difficulty of introducing innovations into practice.

We thus note that providing teachers with recipes for change does not work. Consequently, we offer no prescriptive mandates, no set curriculum for teachers to follow. Teachers must work with each other to think, analyze, and create the conditions for change within their specific circumstances that relate to their personal or professional needs. We believe that teachers' study groups are the key vehicle for this involvement.

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The authors take issue with the notion that language minority students are somehow deficient in their backgrounds, and instead posit households as important resources for teaching.

The funds of knowledge in the community can only be useful if teachers are able to re-orient their instructional practices. To encourage teachers in that direction, the researchers established an after-school laboratory. The way it worked is described here.

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Principal Conclusions Based on Classroom Research

The third and final part of our study involved classroom research. Our goal here was two-fold: analyze the existing organization of instruction and document the work of the teachers involved in the project. We relied on our classroom observations to develop the instructional case studies that form the bulk of this chapter.

We can summarize our conclusions as four major points.

The authors' observations of classroom practice enabled them to make four analytic conclusions.

- The working-class, Hispanic households in our study possess ample funds of knowledge that become manifest through household activities. Thinking of families in terms of funds of knowledge not only captures an essential aspect of household and community life, but helps define (and in many respects re-define) these families as important social and cognitive resources for education. We have every reason to believe that these findings are equally relevant to other populations.
- In contrast to households, however, most classrooms (and most teachers) function in isolation not only from other classrooms but from the social world of the students and the community. Classroom literacy instruction, whether bilingual or otherwise, is generally characterized by teachers following a prescribed curriculum that usually relies heavily on basal readers and worksheet writing assignments. Within these "self-contained" classrooms, there is little opportunity for students to use literacy actively in obtaining and communicating information of personal or intellectual interest, and the intellectual level of the curriculum is usually low; similarly, there are few opportunities or reasons to take advantage of the funds of knowledge available outside the classroom to create new, advanced circumstances for literacy use within the classroom.

The researchers make several concluding points in this section. The student's households are rich in funds of knowledge. But these funds are rarely used in the classroom. A key to making this innovation work is the involvement of the teachers. Once involved, they could draw on the funds of knowledge as rich resources for creating meaningful literacy activities in the classroom.

- The key to the development and implementation of any innovation is the involvement of teachers in the research process. We are convinced of the importance of teachers' study groups as settings that help teachers to support each other in conducting the intellectual and social work necessary to obtain change in their classrooms. Innovations must not be imposed by researchers or administrators, but co-developed with teachers so that the new practices become credible and useful.
- Teachers can take advantage of these funds of knowledge in a number of ways, including inviting parents to contribute to lessons, but we recommend making connections through the concrete academic activities of the students. This requires that reading and writing lessons be re-organized to become more interactive or participatory emphasizing the children's use of literacy to obtain and communicate meaning. It is within these more authentic and flexible classroom contexts for the use of literacy that multiple connections with the social world makes sense to teachers and to students. Such activity based, meaning-centered lessons allow students and teachers to take advantage of all of their (bilingual) resources, whether inside or outside the classroom, and create circumstances for the children's use of literacy in ways that far exceed what is currently offered in classrooms.

Implementation of the Model

We now present three case studies that illustrate key factors in our work. We present the case studies in some depth so that teachers and other educators can use the information to think about these ideas in relation to their own local settings and the ways they teach. In a sense, these case studies, as a whole, represent a composite of the instructional aspects of our model. The studies examine respectively the classrooms of three teachers Karen C., María M., and Ina A. [All teachers' names and classrooms are pseudonyms, ed].

The first study describes the functioning of a third grade classroom in which the students are immersed in literacy, where the children's construction and control of knowledge through literacy is the central focus of the classroom's routine. Teacher Karen C.'s work served as one model of how to organize instruction in ways that helped the children actively use and manipulate literacy to accomplish academic goals. Her case study shows how a teacher can arrange literacy activities to take full advantage of the social and linguistic resources (the children's funds of knowledge) that children bring with them into the classroom. Throughout, the teacher's main concern was not necessarily with the acquisition of specific literacy skills or subskills, but with whether the children were making meaning through literacy as they engaged in increasingly sophisticated activities. This teacher's practices provide a striking contrast to the rote-like instruction typical with working class students.

We then follow with an example of how the study group can function. We highlight fifth grade bilingual teacher María M.'s efforts in changing her instructional practices and in using her colleagues in the study group as primary resources for that change. Through her participation in the study group, this teacher was able to develop her theoretical sophistication and implement changes in instruction within her classroom. The study group served as a source of ideas and as a place where she could discuss with her colleagues the application of these ideas. The study group always had a practical connection to the classroom practice of the teachers and their classroom work had a theoretical connection through the readings and discussions with peers in the study group.

The third case study shows how sixth grade teacher Ina A. incorporated funds of knowledge into her classroom instruction, creating a dynamic social network between her teaching of literacy and the knowledge of the broader social community of her students. This teacher's work is our most clear example of mobilizing funds of knowledge for teaching. Through her classroom experimentation, she re-organized her lessons into theme units within which the children would become active in research, and created the social ties necessary to bring parents and other community members into her classroom to contribute to the academic content of her lessons. Her work represents what we consider a major innovation in teaching: inviting working-class parents to contribute substantively to the intellectual content of lessons.

In sum, the case studies capture the central elements of our pedagogical approach. Readers could ask themselves these questions as they read these case studies:

- What is the role of the teacher in the classroom?
- Is my classroom similar or dissimilar?
- Do I know teachers who teach this way?
- In what ways do teachers and students negotiate the curriculum?
- With whom could I form a study group?

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To illustrate how the model was implemented, the researchers chose to describe three case studies. The first case study describes Karen C.'s success in creating a literate community in her classroom. The second case study describes María M.'s evolution as a teacher through her participation in the after-school laboratory. The third case study describes the way Ina A. mobilized the funds of knowledge in the community to teach literacy skills.

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- How do children learn literacy?
- How do children take charge of their learning?
- How is literacy used by the students?
- How is the children's bilingualism used as a resource?
- How is curriculum developed to develop or maintain bilingualism and to expand the children's biliteracy?

We believe that our approach affords a major re-definition of working-class households as cognitive resources for instruction, of bilingual teachers as active, thinking professionals in control of their practices, and of language minority children as resourceful, able, and competent students.

Towards a Literate Classroom Community: Karen C.'s Sunshine Room

The authors introduce an exemplary classroom, Karen C.'s Sunshine Room. It is a classroom where academic activity always has the highest priority. Their discussion will first tell us something about Karen C. and then describe the sequence of activities in a school day. Finally, they note Karen's use of a thematic unit about Native Americans.

In this case we look at the exemplary classroom which both students and teachers call the Sunshine Room. We will show the intellectual level of instruction in this classroom is always high and the children actively use literacy, in either English or Spanish, as the means with which to accomplish curricular goals. Other key issues of instruction emerged from our analysis, including the importance of trusting the students as learners, of the teacher negotiating with the students control of the classroom's goals and activities, and of the teacher as yet another learner in the classroom. We will elaborate upon these issues within a general description of a typical day in this classroom. This day represents a compilation of numerous classroom observations conducted almost weekly over the course of a year. As will become evident, a general theme in this classroom is that the academic activity always has priority. A student's lack of English fluency never becomes an impediment to full participation in academic tasks at the highest level possible.

We will present a thematic unit of a classroom study of Native Americans that illustrates how the teacher created diverse circumstances for the children to use and apply their considerable intellectual and linguistic resources. We see these theme units as dynamic contexts within which the children learn by manipulating knowledge. These same activities provide the teacher with many opportunities to evaluate how well they are using reading and writing as tools for analysis and for thinking. In our terms, these are contexts within which the children constantly re-define themselves as learners for the teacher and for each other.

A Biographical Note about Karen C.

The teacher is a knowledgeable and experienced professional. She has been a bilingual teacher at this school since 1979, when it became a primary magnet desegregation school. Previously she taught at another bilingual school. Her teaching experience extends from early childhood through college level courses. An articulate speaker, she is frequently called upon by her district, the university, and professional education organizations to discuss her work with colleagues and pre-service teachers. Ms. C. considers herself a "whole language" teacher and sees as her primary role to assist and guide the students by creating an advanced and highly literate environment for their academic work. Currently working towards an Education Specialists degree, she is taking graduate courses that keep her in touch with the latest information on theory, research, and teaching. Her role as an active learner is crucial to the success of her classroom.

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The Sunshine Room

Each day in this classroom begins outside, in the patio area of the school, where all of the children, staff and faculty of this primary school meet to share announcements, sing, and recite the Pledge of Allegiance. The children at this school come from the immediate neighborhood or from other surrounding neighborhoods. Approximately half of the students are Anglo and half represent minority populations, with about 37% Hispanic, 9% African-American, and 5% Native Americans.

The demography of the school is described in the first paragraph; the third paragraph details the ethnic and language background in the Sunshine Room.

The boisterous voice of the principal can be heard over the group and the day begins with enthusiasm. As the children and teachers move into their classroom, the children noisily put away their things, greet each other and move to the group meeting area in the center of the room.

Within this school environment is the Sunshine Room. The classroom consists of 27 children, 12 boys and 15 girls, who come from either the neighborhood or "barrio" surrounding the school (16 children) or who travel from other neighborhoods in the city (11 children) as part of a magnet desegregation program. Two adults assist in the classroom: teacher aide Ms. P. and student teacher Ms. M. These two women, although they have different experiences as teachers, have purposeful roles in this class, becoming team teachers with Ms. C.and participating and interacting with the children in the planning, development and implementation of activities.

As is common in bilingual classrooms, there is considerable diversity in the children's language and literate abilities. According to the teacher, fifteen of the children are monolingual English speakers and readers. Of these, two children, Sarah and Brooke, are learning to speak, read and write Spanish, and Ilinca is learning Romanian. Elizabeth is the only English-dominant bilingual speaker and she also reads in both languages. Nine children are bilingual orally, of these, Veronica, Susana and Lupita are reading and writing in both languages; Francisco, Raymundo and Roberto read both languages but are clearly Spanish dominant, and Rosario, David and Ana are Spanish-only readers. Jaime is a Spanish-dominant speaker who came into the classroom in the fall speaking only Spanish and by the end of the year spoke and read some English as well. Acuzena is a monolingual Spanish speaker, she arrived in the United States from Mexico in the spring and reads only Spanish.

A Typical Day in the Sunshine Room

As the participants in this classroom come together each morning there is chatter in both English and Spanish. The teacher finds a chair in the meeting area and the group quiets for announcements, calendar and weather information, and a discussion of the schedule for the day.

The early morning is devoted to reading a story, mathematics, and recess.

At least one story is read aloud daily by the teacher. The story might be a big book in either Spanish or English, followed by paired reading or a writing extension in which the pattern of a story is followed or new endings are created, or it might be the ongoing reading of a chapter book, perhaps by a favorite author of the class. Reading for meaning is re-established as a goal every day during this class activity. For example, one day the class read *The Gift of the Sacred Dog* by Paul Goble, a selection that effectively combined quality literature with the thematic unit about Native Americans. As the teacher reads aloud it is obvious that her primary concern is that the children understand the story, gain meaning from the book, and enjoy their experience.

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Following the opening story, the class moves into math centers. Very little direction is necessary to get the children and adults moving around the classroom, gathering materials, and settling into four math groups located at various places in the classroom. This classroom is a functionally organized setting. There are several large tables in the room that, along with the ample amount of carpeted floor area, provide work space for the children and adults. Cubbies and cupboards are used by the children as storage space for their personal belongings, but the school supplies (pencils, paper, crayons and the like) are for the classroom community. They are all within easy access of the children and are clearly labeled in both languages. A piano, loft and the teacher's hidden desk allow children places to hide away to work, read, and visit.

Following math, the children usually go outside for recess for about a half hour, although many students request permission to stay inside. Opportunities to continue writing projects, illustrate books, catch up on assignments, and work on second languages are relished by the students. Roberto and Rafael ask to work on a collaborative book, Brooke asks to practice reading in Spanish, and Shelley finishes a filmstrip project. These children work independently and the teacher uses this time to prepare for upcoming activities, plan with the student teacher, and interact with the children either inside or outside on the playground.

Creating a Literate Community: Sustained Silent Reading and the Writing Workshop

At approximately 10:30, the children reconvene at the meeting area before they move into a language arts block that consists of Sustained Silent Reading (SSR), literature circles, and writing workshop (WW). Today the children are continuing their literature studies of several authors. While the teacher and the student teacher meet with two of the literature circles, the other children either meet independently in their own author-centered literature circles or do SSR.

The environment Karen C. has created is one which immerses the children in print. The authors describe the wide range of reading opportunities presented to the children.

SSR in this classroom means an extended period of time, at least fifteen to twenty minutes, often more, reading any material of choice. The children and adults all read, and the reading materials are extensive and varied in type, topic, and language. The teacher frequently selects a piece of adolescent literature to read drawing upon her children's literature courses at the university. Newspapers are available and are usually the choice of the student teacher and the teacher assistant. They share articles with each other, chatting as they would over the breakfast table at home. Children read magazines, chapter books, books made by students and the whole class, picture books, comic books, non-fiction books. ***Miss Rumphius***, ***Dear Mr. Henshaw***, ***Little House on the Prairie***, ***Historia Verdadera de una Princesa***, ***Clara Barton***, and many, many more titles have been read during the year. Children settle in with friends or alone during SSR, finding niches under the loft or piano or lying on the floor. The SSR period is not silent, although it is subdued. Sometimes music plays in the background and children share information and illustrations as they read. Some children read out loud to themselves or to a friend. The pleasure of the reading experience is punctuated by occasional laughter.

What is most noticeable in this classroom is how the teacher, through the arrangement of the class and through the activities, immerses children in print. As one walks through the room at any given time, the children and adults are using print to complete activities and "live" successfully in this highly literate community. Books are everywhere. They are shelved near the group meeting area marked with a sign that reminds the children about a classroom etiquette: "Ms. C.'s library and personal books. You may read

them, but please return them to this spot!! PLEASE!!!" A box stuffed to overflowing with books published by individual children and the class is labeled bilingually: "Sunshine Room Authors/Autores del Sunshine Room." These two groups of books are popular sources for reading material during SSR. Other books come from the window sill across the room. It is covered with the books used for the ongoing theme studies. Books about the general topic of study are categorized in bins, for easy access. During the Native American theme, the categories present are: Navajo, general books about Native Americans, Pueblo, Ancient Tribes, Yaqui, other Southwest tribes, Hopi, Tohono O'odam (Papago), Eskimos, legends/poetry, Native American art and music. These books range in type, from Byrd Baylor's and Paul Goble's picture books, to Aliki's cartooned information books, to adult non-fiction and coffee- table books. The books not only provide information sources in English and Spanish for the thematic work, but are frequently chosen by the children for free reading during SSR.

Still more books can be found elsewhere in the room. When the teacher was preparing a new literature set for author studies, a shelf of these books was marked: "Favor de NO llevar libros de aquí. Estoy preparando los próximos estudios literarios. [Please do NOT take books from here. I'm preparing for our next literature study groups.] Ms. C ." The children's selections from the library are in yet another box, waiting to be exchanged at their next visit. A peek into the children's cupboard areas reveals books they are taking home to continue reading and books they are bringing from home to read and share with others.

In addition to the wealth of books and reading materials, other functional print dots the environment. Two alphabets hang in the room, one in English and one in Spanish. Classroom rules, agreed upon and signed dramatically by the children and teachers are posted near the door. Schedules that remind participants of activities such as guitar lessons and time in the loft are nearby their associated work area. Written communication is evident between the members of this classroom community. A note hangs on the file cabinet by Ms. Crowell's desk: "Mrs. C., I found out Tuesday 13th of March was when Uranus was discovered in 1781. From, Rita." Notes and letters in Spanish and English from the teacher, the teacher assistant, and the school to the parents are waiting to be delivered at dismissal time. The daily schedule is changed each morning and referred to by all participants throughout the day. Reading and writing are not only subjects in this classroom, but essential, functional aspects of the classroom's intellectual life.

In preparation for the literature study groups, the teacher brought in approximately 50 books in text sets according to the author. The children choose which author and in which language they wish to read and sign up for literature circle groups. Each group meets about two times a week with the adult member, and at other times independent of adult participation. In addition to reading a variety of books by the selected author, the children learn biographical information about the author, compare his or her varied pieces of writing, extend their reading into writing through literature logs and other writing projects, analyze plots and illustrations, create story maps and a variety of other related experiences.

On one revealing occasion, the William Steig author study group meets with the teacher who has been absent for three days attending a national bilingual convention. In her absence, the children were to meet as a group and be responsible for developing a visual representation of the connections they saw among the literature set of William Steig books read by the group. The teacher had suggested the preparation of a chart, a web, or a graph, but the specifics of the product were left up to the students. The

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Karen C. has made numerous books about Native Americans available to the students. These are organized into thematic collections and students are free to borrow them. Other book collections deal with specific authors or topics.

Students are free to use material, but Karen C. reminds them to use good etiquette and return borrowed books to their proper place.

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Various literature circles are meeting in the classroom and each circle is visited by Karen C. The researchers describe the way Karen C. works with a group who is analyzing the relationships between multiple texts of the same author. Ms. C. provides guidance to the group, but she does not dogmatically specify the approach.

group also was to incorporate a list, developed before the teacher's absence, in response to her question, "What connections do you see?"

The children share their work with the teacher. They have developed several representations and they explain their graphs and charts. The teachers asks questions to clarify the children's intentions, such as "What do these abbreviations mean, Jonny?" Some of the products were accomplished by groups so that negotiation among the students was necessary, others were developed individually. The group works together to incorporate the children's ideas and to accomplish the teacher's objective for a second chart: to develop one clear, visual representation. The teacher asks, "What would you like to try?" and the group decides to develop a web, although none of their individual products were webs. "Let's try it," says the teacher, "if it doesn't work out we can always start over with a different idea." They proceed to place the name 'William Steig' in a circle at the center of a large butcher paper and to put the names of specific titles in smaller circles all around the paper. The teacher serves as a recorder while the students make suggestions and remember titles. However, when the attributes from the list of connections are added to the web, it quickly becomes clear that the information is too complex for this format.

The teacher recommends a chart format instead and turns over the butcher paper. She lists the names of the books being described across the top of the paper and the connections between books down the left hand side, then the group as a whole decides which of the connections fit each book. Jonny contributes the idea of distinguishing between those connections important to the story, with a check, or those which are "details," with a circle.

The teacher leaves the group, moving to another literature circle. She leaves Rita in charge of recording information for the next title and suggests that the children take turns completing the chart. The children complete the chart systematically without the teacher. Evan goes to the shelf where the author centered books are housed to verify whether or not an attribute is present in a book under discussion. "Did this work?" the teacher asks when she returns to the group. As they look at the chart, they decide that it does summarize what they feel connects the William Steig books and decide to add the copyright dates under the titles. This decision leads to the idea to restructure the chart in chronological order. The teacher volunteers to put the titles in the right order when she copies the chart. "Would you recommend these books to other people?" she asks the students as they break up their group.

In another literature circle, the student teacher meets with a group of children who have already read *Pepón* (in Spanish) silently to themselves during SSR. Now the group reads the story aloud, not to evaluate oral reading, as might be the purpose in a traditional classroom, but to ensure that all of the children, even those who might be called 'not so strong' readers, have a complete understanding of the text so that they may participate in the later parts of the literature study. Veronica is hesitant when it is her time to read out loud. The student teacher reads the page with her, giving Veronica confidence, and then the group moves to the next reader. All of the talk in this group is in Spanish.

On another occasion, the teacher meets with four Spanish readers. These children are selected by the teacher for special attention because she felt they are not reading strongly enough for meaning. The student teacher works with a similar group in English. The teacher gives each of the children this text:

> Me gusta (blank) el jardín zoológico. Para mi es un (blank) interestante. Siempre (blank) los leones y los monos. Los

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> leones parecen (blank) y al mismo tiempo hermoso y valientes. Los monos son (blank). Van y vienen (blank) y hacen gestos chistosos. Aunque los leones y los monos son mis favoritos, me (blank) también los elefantes y las jiráfas. En (blank) todos los animales del jardín zoológico me fascinan.
>
> [I like (blank) the zoo. For me it is an (blank) place. I always (blank) the lions and the monkeys. The lions look (blank) and at the same time beautiful and brave. The monkeys are (blank). The come and go (blank) and make funny gestures. Although the lions and monkeys are my favorites, I (blank) also the elephants and the giraffes. In (blank) all of the animals in the zoo fascinate me.]

The authors describe the kinds of interventions Karen C. makes to strengthen the language skills of students. Her intention is to have students read for sense—and thus she urges them to substitute a word that will make sense whenever they don't know a word.

The group reads one sentence at a time in unison, saying, "blanco" in the spaces. Then the children offer words to fill in the blanks.

> Ana: "Miro." [Look.]
>
> Teacher: "Siempre miro los leones y los monos. ¿Eso tiene sentido?" ["I always look at the lions and monkeys. Those that make sense?]
>
> The group: "Sí." ["Yes."] (The teacher writes "miro" on the board for sentence number three.)
>
> Raymundo: "Pelean." ["Fight.]
>
> The teacher: "Siempre pelean los leones y los monos. ¿Eso tiene sentido?" [The lions and monkeys always fight. Does that make sense?"](She adds it unto the list when the group approves.)

The dialogue continues as Rosario and David suggest "juegan" and "viven" ["play" and "live"]. The children decide as a group if each word is appropriate to make the sentence make sense. If so, the teacher writes the words on the chalkboard. When all of the sentences are completed, the group reads the entire paragraph again, using the first word in each written list to fill in the blanks. Often, during the course of the activity, the group uses language to talk about language. The teacher points out that the words the children selected are all verbs, words of action, and that most any verb would make sense here. She stresses meaning, telling the students that it's important "que las historias siempre, siempre, siempre tengan sentido y hagan sentido" ["that the stories always, always, always have meaning and make sense"]. Therefore, she says, when you (the students) are reading and don't know a word, substitute a word that makes sense.

SSR and literature studies transform into writing workshop with a quiet verbal direction or by turning on and off the lights. Children murmur, "Aww," with sadness and displeasure as they are instructed to put their reading material away, but they are soon equally absorbed in their writing. Materials and work partners change; quiet talking about reading becomes active discussion about writing projects, illustration, and publication.

The researchers note that throughout the language arts activities, Karen C. functions as a collaborator with the students.

Susana, a bilingual student, and the teacher are positioned at the computer, preparing to print Susana's text for illustration and publication. Susana reads her book, written in Spanish, to the teacher who follows on the monitor. The conversation is in English. "You don't have a title, Susana. What's the title of the book?" asks the teacher. She types in "La muchacha rebelde" ["The rebellious girl"] and prints out the text.

A group of girls sit at a rectangular table with their ongoing projects spread out in front of them. "Let's have author circle now," says Brooke and she and Elizabeth take turns reading their evolving text to Angel. "What's the title?" asks Angel as she works on her own writing. Susana

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listens while she colors elaborate illustrations on a card to a previous teacher in the school.

At the piano bench, Rachael and Lupita finish a conference with the student teacher about spelling and return to the publication process. Their story represents an interesting collaboration. Rachael, a monolingual English speaker, approached the bilingual Lupita and invited her to join her in a project so that they could produce a bilingual book. Their joint story concerns a young English speaking girl who encounters a monolingual Spanish speaking girl and the problems they face as they develop a relationship. In the course of their dialogue, Rachael says, "Lupita, you know what we should do?" and suggests a minor revision. "No, that won't sound good," counters Lupita. "Okay, you're right," Rachael adds, "I'm not good at the Spanish, Lupita." "You're not? Then just do the letters," comforts Lupita.

Jason and Evan are stretched out on the floor. There are papers spread out all around them and they explain that they are working on two separate stories of science fiction. Jason's science fiction piece is an elaborate comic book about 'Griffins' which has been evolving for several weeks. He has written the text and separately drawn illustrations in comic book form. Now that he is coming into the final stages of his book, the teacher has become a collaborator and is copying the text into the illustrations at his direction. She was drawn into the project because Jason couldn't write small enough to fit his words into the comic book format.

The class' activities turn to writing. Many students are writing fiction—some of which is experimental. Many students have more than one writing project going on at one time; their writing includes a variety of genres, languages, styles, and collaborative relationships between children and adults.

Shelley and Sarah are deeply absorbed in their writing at a circular table. Like Jason, they have been involved in one project for an extended period of time, but theirs is a *Choose Your Own Adventure* story about a time travel adventure (which the girls titled: *An African Adventure*). It began as a complex skeletal outline, created on two long sets of taped together papers, one for each girl. At each step of the outline, the reader (an active character in the story) makes a decision and the decision alters the plot of the story. Shelley and Sarah have finished their outline and are now working on transforming it into readable text on note cards. The teacher was a consultant for their project as she helped them create a workable process for formatting their complicated text.

Jaime and Roberto are nestled under the loft. They are busy writing letters during WW time. The letters, written in Spanish, are headed across the room to David and Raymundo who are scrunched under the study carrels. Jaime and Roberto are writing to them "because they don't want to be our friends and we want them to," explains Roberto.

The teacher describes the process of attending to the mechanics of writing skills within a classroom emphasizing writing as a process:

> I keep almost everything that the kids write so that I'm real aware of what things they are trying out when they are writing. If I see a lot of children exploring something then I will do a short class lesson (about a skill). We did that with quotation marks. There were a lot of kids trying to put conversations into their stories but they don't use punctuation and they don't use speech carriers and you couldn't tell who was talking. So we spent a couple of days doing written conversations, the kids did them with each other in class and they were also asked to do it with their parents at home. And then in the classroom we talked about how you put (the punctuation) in so you can tell who is talking. Then the kids went back and did that with their written conversations. I have seen that in their writing since then; some of the kids are really starting to use the ideas we practiced. The speech carriers appeared right away, they were less sure what to do

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> with the little marks, but some of the kids are using them now. And if I see them I say, "Oh, I see you are using quotation marks in your story." So most of the teaching about writing takes place along that line.

She continues by explaining how they use the children's reading to develop their writing:

> Also, we look as readers. We might look at how an author uses a particular stylistic kind of thing or how poets use things like alliteration and try out some more guided kinds of writing. We do some pattern kinds of writing sometimes when we're exploring things like that. And kids may or may not pick up things on their own when it comes to their writing but I certainly see a lot of growth. And the spelling development is there, too, because I don't teach the spelling program either and the kids are beginning to trust that they will learn to spell.

SSR and writing workshop in this classroom are favorite times of the day for both the students and the teachers. Many students have more than one writing project going on at one time; their writing includes a variety of genres, languages, styles, and collaborative relationships between children and with adults.

A few minutes before noon, the children are reminded to get ready for lunch. More groans and sighs can be heard as they put away writing materials and gather at the meeting area once again. The teacher takes a moment to comment on the morning's activities and set the stage for the afternoon. At the end of the month children with excellent behavior records are invited to a special lunch in the room with the teacher. Frequently, the teacher's philosophy is shared during moments like these, allowing the children open insight into her beliefs about learning. "Talking is probably the most important thing we do in here because you learn the most when you can talk while you work," the teacher tells the students, although she cautions that they shouldn't get so loud as to disturb each other.

Using a Thematic Unit about Native Americans

When the children return from their lunch period, they become involved in work organized around thematic content. Half of the class moves into centers, or committee work stations while the other half of the class works at two large tables on their individual projects. The theme under way is about Native Americans. Karen C. explains how much control the children have over the topics that form part of these theme studies:

> The theme cycles are pretty much controlled, the topics anyway, by the kids. Right away at the beginning of the year we go through a group brainstorm process where the kids will put out anything they are interested in studying and we group things together. We put sharks and whales in the list together with someone that said ocean so that related topics are chunked together. And then the kids are asked to vote for their 10 most favorite, and those are the ones that we do as group theme cycles for the year. I put my things on the list, too.

The writing workshop and the sustained silent reading occupy the time from the morning recess until lunch. After lunch, the class' attention turns towards their thematic units. In the offset quotes, Karen C. describes how the students control the topics.

Other topics chosen for intensive study this year have been fairy tales, astronomy, ancient Egypt, and the ocean. As the teacher explains it, the theme studies involve both individual and collaborative projects among the students:

> [It] usually starts with some kind of a web, sometimes the kids would share what they already know. I usually ask them to generate lists of questions of what they want to know about, and that helps arrange centers or activities, knowing

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> what they're interested in, what their areas are. With the Native American unit we are doing right now, the kids wanted to do some independent research projects but they also wanted to do centers. The reports they'll produce will probably be a page or a couple of pages and we talked about binding them into a book for the library, because we found very little information in our school library to help us.

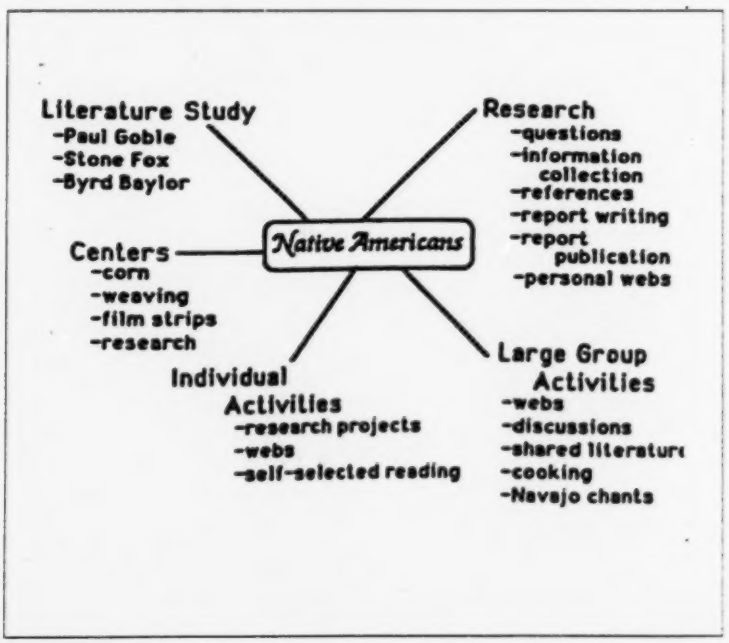
Based on the type of planning just described, the teacher collects wide and varied literacy materials to fill the classroom with information in both Spanish and English. In addition to books, approximately 100 trade books, pieces of art, posters and artifacts find their way into the classroom from the teachers, support staff, parents, and the children themselves.

Karen C. makes use of the children's interests and ideas and she plans the learning experiences that will form part of the theme units. The themes involve large groups, small groups and individual activities, and all subject areas. The general organization of the Native American theme can be summarized as follows. The illustration below graphically represents the thematic webs.

Each theme culminates in some form of a product or of a demonstration of the group's learning. For example, the Native American theme produced a class book that included all of the children as co-authors and a detailed bibliography. A theme about Egypt ended with an impressive transformation of the classroom into a museum, which the other classes visited with the students serving as guides. These ideas evolve during the themes and are usually initiated by the children themselves.

A thematic unit is designed to culminate with a demonstration of the groups' learning. While the learning is progressing, there are various centers of activity—each of which has a different location within the classroom and which may draw upon assistance from one of the adults.

The centers that involve the children during the Native American theme vary in content and process. At one side of the room, Angel, Roberto, Jaime, and Francisco are learning about corn. On the table where they sit is a basket containing blue and yellow corn chips to taste, a collection of trade books in English and Spanish about corn, a two-page information sheet, and a colorful basket of squash and Indian corn. The teacher briefly joins the children to explain the procedure. When she leaves, the children taste the corn chips, read a book about corn, and write about each experience. The books are varied in style and language and the children cheer when the teacher explains that she found a Spanish translation of one



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of the books (*Corn is Maize*, by Aliki). The children also read a corn legend on the paper included at their center, titled, "Niman dancers Hopi" and color the accompanying illustration.

Across the room, Rafael and Susana work with the teacher assistant on weaving. Each child has a forked branch which serves as the frame for their work. Ms. P. helps the children select colors, measure the appropriate amount of yarn and begin the weaving. Spanish predominates their casual and comfortable conversation as the children methodically weave colors of yarn around the natural looms. In the basket on their table are books about weaving and a diagram that labels the components of weaving in both languages, as well as the weaving materials.

In another center the children can view film strips. The children are using this center as a resource for their ongoing research projects. The teacher has made several films available. The children select which films they wish to view and if they prove to be helpful, the information is included in reports and documented on bibliographies.

Another center involves the children who are continuing work on their individual research projects. These children and the teacher are seated around two tables which are covered with bins of books (categorized as explained above), 3x5 note cards, and children's work folders in manila envelopes.

Lupita, who is researching the Sioux, is reading a trade book in English called Plains Indians, concentrating on a section called "Games and Pastimes." As she reads, she records in Spanish on an index card information she finds relevant. She explains the process she and the other children are following. Lupita's work provides a good example of the research and learning process involved in this theme activity. The class as a large group began the theme by webbing the content they wanted to learn through their study.

Secondly, each child composed his or her own web. Lupita's web includes the accompanying questions she wanted to answer about Native Americans. The students then write self-generated questions on index cards about their previously chosen specific topics about Native Americans. The children may read and write in either language, or in a combination of the two.

The strategy of a web is explained here: webs are non-hierarchical relationships between information. The use of semantic webs and the way students work in the centers encourages students to shape their own learning. The researchers describe the broad array of interests pursued by the students in their study of Native Americans.

As the children look in the books for the answers to their questions, they record pertinent information on their cards. They also record the books they use on a reference sheet which asks for information about the title, author, call number, and whether or not they will use the book for information. This will become a bibliography when their upcoming reports are finished.

Upon completion of their research, each child completes a second web summarizing the information they have learned, as a way to monitor their own learning. This entire process is graded by the teacher (very similar to how graduate students are evaluated) according to the quality of the questions, the first web, the resource list, the note keeping, the final report, the final web, and a composite, overall grade.

Veronica is studying the Yaqui Indians. The teacher is sitting with her, reading to her from an adult level book written in English (*Southwestern Indian Tribes* by Tom Bahti). After she reads a passage, the teacher translates the ideas into Spanish and discusses it with Veronica in terms of her research questions. The teacher is very absorbed in the process herself; she appears to be a co-researcher with Veronica, eager to learn and share new knowledge with her student. Richard and Evan are at the opposite end of the table studying the Anasazi. They are searching for information about weapons and how the Anasazi defended themselves. Richard finds a

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picture of an "atlatl," a missile launcher used for hunting, and they decide to use it for their answer. Each boy traces the illustration, cuts it out and tapes it to his index card. Evan finishes taping his and says, "This is cool," as he hurries over to Jason at another table to share what he has learned. Jason is discussing the Sioux and responds to Evan saying, "The Anasazi didn't trade with the white men. The Sioux just needed to buy iron for weapons and they did the rest." Talk centered around the content of study is frequent and natural.

From the initial web, through the intermediate stages of planning, center activity, and research work, the theme studies are a captivating curricular activity, one in which the children use literacy to search for knowledge and to present their ideas to others in the classroom community and in the school.

What are the Implications of the Sunshine Room for Teachers?

The nature of instruction in this classroom is exemplified by the Native American theme unit. There is no ceiling on the expanse of possibilities for intellectual work in this classroom. In particular, there is no limit to what the children may learn about Native Americans during this unit or about any other topic in other theme units. The high expectations built into the curriculum, the nature of the materials employed, the guiding and supportive role of the teacher, the mutual trust between teacher and students, and the use of the children's bilingualism and literacy, all contribute to creating an advanced intellectual and literate community in this classroom.

Here the authors begin their analyses of classroom practice. The sections which follow speak to significant factors that make the Sunshine Room effective.

Curriculum

The curriculum, organized into center activities and independent research projects for the theme studies, is structured so that children may work at their own levels, follow their own interests, and have their individual academic needs met. The teacher allows and encourages children to stretch their abilities, to follow their own interests, and to take risks with new experiences, materials, and challenges. Simultaneously, the design of the curriculum and the participation of the teacher support the children and ensure success, acting as a safety net for those who are taking risks, especially in their second language. At all times, the children are encouraged to be responsible for their own learning and to be active participants in the learning. The classroom is socially organized to support that goal.

The researchers highlight two aspects of the Sunshine Room. First, although learning is relatively independent and self-paced, the children are encouraged to use each other and adults in class as resources. The children are also encouraged to be responsible for their own learning. Second, process is emphasized as well as product.

The curriculum also indicates the value of emphasizing process as well as product. In the Native American theme (and in other classroom activities), the children not only learn a wealth of information about their topic of study, but they learn how to go about studying the topic. The children are responsible for conceiving their own questions, guiding their own learning with materials and experiences in English and Spanish, and following a sophisticated research procedure. They are expected to display skills at using reference materials, and to articulate their awareness of the reasons for keeping records of reference materials. The research process culminates in a report, wherein children learn to produce a piece of writing in a specific genre at the same time that they are providing the school library with real, researched, and referenced information.

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Materials

The materials in the classroom also help to extend the amount or type of learning possible for any child. Included in the materials for the Native American unit, for example, are a great number of books, including information books, legends, cookbooks, music and art books, and many pieces of children's literature of various genres that deal with Native American topics. The teacher, the other adults in the classroom, and the students search for these books and they bring their own, borrow others, or check them out of the library. Many of the books are at an adult level. The children read these books selectively, and glean information pertaining to their self-selected topics and specific questions. The books are sometimes very difficult, but the teacher assumes that with her assistance, the students can read and use these books. This is illustrated by the interaction between Veronica and the teacher, described above. The teacher helped Veronica, a dominant Spanish speaker and reader, translate a difficult text from English into Spanish, rather than assuming that Veronica could not handle the information, or that she needed an easier text.

It is clear that significant efforts are made by the teacher and other adults to provide relevant materials for students. When material is difficult, students are assisted by adults—however, the intellectual level of inquiry is kept high.

Teacher as Learner

The teacher typically assumes a guiding and supporting role in the classroom; she is also an active participant in the learning and is equally absorbed in the content and the process of learning. Although the students are exceptionally independent and are able to find resources, complete activities, and make decisions with very little adult assistance, the teacher is keenly aware of the interests of each child and is actively involved in their learning. She researches along with the children, combining her own content questions with demonstrations of the research process, and the types of questions she asks are usually probing questions requiring elaboration and explanation. The teacher spoke to her role as a learner in the classroom:

> I am the kind of person who is never quite satisfied and that keeps pushing me. I have always felt that if I got to a point when I stopped being a learner then I needed to be out of the classroom...I model learning for the kids when I sit during SSR reading my textbooks and my university texts, reading my professional books and text sets for the classes I take and sharing my trials and tribulations of writing papers....[The children] are aware of adults [in the classroom] learning for themselves as well as [our] telling them that we learn a lot about how kids learn from watching and sharing with them.

Within the theme unit, the teacher has ample opportunities to combine her goals as a teacher with her interests as a learner, as she explains it:

> By going through it myself, the questions are really my questions, things I really want to know about how Native Americans observe the sky and what kinds of legends they told about the stars because I love astronomy, so you know there is genuine interest, they are genuine questions on my part.

Mutual Trust

The children have considerable control over virtually all aspects of this classroom. They select groups, reading materials, writing topics, and theme topics. They generate their research questions and negotiate their learning tasks with their teacher. The teacher allows and promotes this sharing of power, based on her trust of them as learners. She explains it as follows:

Here Karen C. acknowledges that students largely shape the class, selecting what they read and write about.

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> It's taken a lot of trust to give control to the children but I think that I've really been rewarded in the long run. The day may not run smoothly and it may not look organized to people who are not knowledgeable about what is going on in the classroom, but I think the learning that is going on the children's behalf and on my own is much more genuine and meaningful when it is like that.

The teacher's trust in the children's abilities enables her to set high expectations for them; their trust in her allows them to take risks, to experiment, and collaborate with her in learning. Learning in this classroom is not only an individual achievement but a joint accomplishment between adults and children.

Bilingualism and Literacy

The classroom is truly bilingual and the students make appropriate language choices, depending upon the nature of the activity. Bilingualism is also used to foster the social relationships between the members of the class and between the students and the adults.

Bilingualism in this classroom is not only a goal but a powerful resource for learning. It forms an integral part of the classroom community and a means for children to expand their literate and social experiences. In the study centers and groups, Spanish is used interchangeably with English so that the children learning English could both understand the content in their dominant language and expand their vocabulary and comprehension in their second language. Whenever appropriate, recording information occurs in either language, with decisions for language choice made by the children and by the teacher, depending on the activity and the materials. The teacher strives to provide the children with materials in English and Spanish because it expands the children's literate worlds, and to use their bilingualism to create interesting, advanced conditions for literacy use and language learning. But in general, the students' and teacher's bilingualism is used as a resource to expand opportunities to obtain, create, and communicate knowledge, and to develop the social relationships so essential to this classroom's work.

A Teacher Refines Her Practices: María M.'s Evolution

This case study examines the study group and how it affected the practice of teacher María M.

This case study spotlights the work of María M., a fifth grade bilingual teacher, the process through which she transformed herself as a teacher, and the role of the study group in facilitating that process. The study group developed as a means to provide a context for teachers to think and to analyze their practice. Two research assistants (E. Saavedra and J. Dworin), both experienced teachers, facilitated the study group sessions. Although the group was initiated by researchers, it quickly became teacher-led and directed. Four major activities formed the bases of the group's work:

- Creating a support group where teachers could inform, assist, and challenge their current thinking and instructional practices.
- Exploring the relationship between theory and practice in teaching.
- Selecting topics to address in practice in relation to their own personal and professional needs.
- Developing literacy instructional innovations that could challenge their roles as teachers.

We will present some examples from the study group and discuss the potential of such a group for facilitating similar transformations in other teachers. Above all, however, the key factor in María's transformation was María herself. Without seeing the teacher as an active participant, one cannot appreciate the process of her development, or of teacher change more generally. From our perspective, administrators, district personnel,

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and especially researchers, cannot change teachers and their practices: the process of change is simultaneously social and personal and it takes a sustained, although not necessarily a solitary effort, by the teachers.

A Bibliographic Note About María M.

María is 26 years old and was born and raised in Tucson. Her father was born in Arizona and her mother in Mexico. Her first language was Spanish, but both Spanish and English were spoken in her home as she was growing up. She attended a local community college and graduated from the University of Arizona in 1987, with a degree in bilingual education. A teacher for three years, she is currently taking graduate courses towards a master's degree in Reading.

María M. is a relatively new teacher who is traditional in her educational practice. However, she is motivated for change and is pursuing advanced education at the university and participating in the project.

María M.'s Classroom at the Beginning of the Project

We started observing María's classroom during the previous academic year (1988-1989). Her classroom was, in general, quite traditional in its organization of instruction, characterized by teacher-dominated lessons and a dependence on basal readers. But María was already attempting to introduce some change into her classroom practices. Although the classroom operated as a large group for the majority of instruction and all of the students worked on the same assignments at the same time, they were seated in small groups and interacted in them. The teacher lead lessons in the basal reader and students took turns reading aloud in Spanish or in English and the teacher asked questions about the text. The students also did some independent reading and workbook assignments, and the teacher supplemented the basal readings by reading to the students and by having students read to the class.

Writing took place primarily in response to worksheets and assignments. However, the teacher was introducing a number of writing innovations into her lessons. For example, the students were writing in journals which are read by the teacher. She allowed the students about 5 minutes each day to write on their journals. In sum, María's class combined traditional methods with attempts to implement more interactive, or process-oriented literacy lessons. In this respect, she was representative of most of the teachers participating in the project.

María Joins the Study Group and Accepts the Invitations for Change

María agreed to attend the study group at the beginning of the second school year of the project (1989-1990). The study group served several purposes, from supporting on-going practices to being a catalyst for change. Some of the teachers attended the group regularly, discussed issues, did the readings, but did not attempt much change in their classrooms. In one case, the teacher continued to use the basal reading series in her classroom but started to examine her teaching practices critically, while her teaching partner re-arranged his reading lessons into literature-based groups. In another case, the teacher experimented with reading retellings as a way to collect new information on her readers having problems. A goal of the study group, therefore, was to accommodate diversity, and help the teachers forge their own paths to change.

In some respects, María's response to the study group represents an ideal example. She used the study group as a context in which to reflect upon her practices, and with some trepidation, embark upon a process of slowly changing her teaching, obtaining a new understanding of both theory and practice. The following excerpts show how in the study group, ideas about change in the role of teachers were in the air.

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During an initial study group session, discussion centered around ways of organizing writing activities that would build on the students' interests. The group then turned to the question of teacher control of lessons: who has control of classrooms? The teachers—especially Karen C.—become resources for each other's thinking:

Here the researchers describe the ways teachers become resources for each other in understanding new instructional approaches.

ES: I keep hearing over and over the role that we play as teachers; we say things like that as a teacher you want, you make, you give, you provide, we make objectives, who has control of the classroom?

Karen: The children.

ES: When you say we want, we give, we provide?

Karen: I think the kids in my class have control of it....they've chosen what they want to study, they chose their own writing, they choose the books to read, it may be orchestrated....it's learning what they want to learn and what they need to learn at any particular point.

Ana: But how do you get them started?

Karen: It's invitation, lots of invitations....

The teachers then discuss ways of helping the children find a purpose for writing, and how to give them the time to do it. A common theme in the discussion centers on trusting the students and in providing them with an environment for risk taking, as we show below:

ES: What underlies that trust?

Karen: I guess the knowledge, the belief that every child is a learner; that every child can learn.

ES: And how do you develop that belief?

Karen: By watching kids, watching my own children...

Ana: Giving them the freedom to learn...

Karen: I would like to spend my whole time just sitting in the middle of the room, or just wandering around with my little clipboard and just watch and eavesdrop all day long, you hear and see the most amazing things....

María: You see a lot of learning going on...

Karen: Sometimes we are so involved we miss it, we miss what the kids are doing...

The teachers discuss the need for objectives and for good daily preparation for teaching, as well as how one develops the role of facilitator of activities.

ES: How do you get to the point of being an orchestrator and facilitator... what is the process you went to?

María: Did you model for them?

Karen C., who figured prominently in the previous case study, is a key participant in the study group. She motivates the other teachers to reflect upon their educational practices.

Karen: I modeled a learner for kids. I sat at my desk today reading and highlighting ...my own learning at a professional level is very ... are to the kids and I share that....and letting them know that I am learning from them. You have to give up all the control, you can't have all the control if you want those kinds of things to happen; you have to give it back to the kids, you give the responsibility and the right and the freedom to do it, and it means you organize your classroom in a different way: it means you interact with them in different ways...in this article (the author) calls it "gentle

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> impositions," I like that, I really do...rather than being the questioner you are the participant, and it's hard for some kids to accept you that way...

The teachers then discuss the work of one of the teachers and his use of folk tales in the reading lessons, how teachers must take risks and allow failure to happen and learn from the students and their own failure. It is within this context, where teachers are analyzing their own and each other's practices, that María finds the support to attempt changes she wants to make in her teaching of literacy.

Ideas from Reading Materials Stimulate New Practices

In another session, María describes some of her early efforts to try out literature studies with her students, instead of relying on the basal readers. We had distributed several articles on reading and writing workshops; several teachers were already trying out some ideas suggested by these readings. María mentions that she was adapting some of the ideas from the articles and trying them out in her classroom and describes how she had her students summarize, answer questions, learn vocabulary from each story and record it in a response log. She then continues:

> I read this article you gave us, and rather than doing response logs, what (the author) had them do was read for about thirty minutes, and then the next fifteen minutes as well. She would give them questions, mystery questions, and then they would come up and pull the questions out, and then in a group they would answer them (verbally)...and I thought, well, that is yet another way to do it, you don't have to use response logs. Then I read on and it said that she later added that to her class, and I thought, "that's neat," you can combine all those things...just to give (the students) some structure, to help them grow in their thoughts, give them some guidelines to follow. I just couldn't say, "Get together and talk"; I think they need to have some guidance as to what to talk about...(Transcripts, 11/4/89).

María M. describes her experience with using varied reading materials rather than the basal readers.

María was using the articles as a resource to elaborate her thinking about her classroom practices and using the study group to discuss her views. Some of the reading activities discussed in the article gave her an opportunity to examine whether or not she wanted to put these views of literacy into practice. The study group was becoming a place where she and the other teachers could reflect on their theory and teaching of literacy.

Peer Interaction Stimulates Reflection on Classroom Practice

The major vehicle for examining different views about the teaching of literacy, however, was through interactions with the other teachers, including teachers from other schools and grades. In the following excerpts, María is questioning Karen C. about her teaching strategies in relation to the implementation of reading and writing workshops in her classroom. During this exchange the other teachers were listening or participating in the discussion, although María takes the lead in questioning Karen.

Here María M. asks Karen about the ways she organizes the reading period. The researchers provide a transcript of the dialogue, illustrating the ways that the teachers are shaping their approach to reading.

> María: How do you organize your reading period?
>
> Karen: Right now the kids, we're doing a unit on Native Americans, the reading is integrated with the whole study, the kids are all studying about their projects. I've put together some sets of books, some have the same title, multiple copies, others are books that are thematically related. And I did book talks, I spent about fifteen minutes just introducing the different sets to the kids. At the end of the day there were just sheets up on the chalkboard that

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identified the sets and they signed up for the book they were going to read.

María: And then what happened the following day?

Karen: They went into their groups and they had with them their books and their lit logs. And they read, wrote in their logs and shared. While they were doing that I went around to the groups. And what we did today was just brainstorm things that you could just talk about related to what we read today. We came up in all the groups with a list of four or five things, and then they were asked to identify one, which they would discuss tomorrow. And so tomorrow, the expectation is you come into the group prepared to discuss whatever it was your group decided on.

Ana: Can they take the books home?

Karen: Yes, I have one group that is reading *Stone Fox*, which is longer, which is about 80 pages. And today they decided, they negotiated how much they would read by the next day, and there's two kids in there who are just pretty much new to English reading, but they really loved to try that book. And so we said, "Yes, go ahead and take it home, you know, and if you find that two chapters is not enough or it's too much, come back and re-negotiate, but it is expected tomorrow that they will come in and talk about Chapters 1 and 2 in the book.

María then asks about guidelines and scheduling relating her questioning to the article she read as part of the study group; Karen responds with two factors that are central to her work, having the students give direction to the activity, and having them establish the relevance of their readings to their personal lives.

María: When (the students) respond in their logs do they write whatever they want or do you give them guidelines about what to write?

Karen: We've done some things where I asked them to explore plot, and character, and setting, when we did our fairy tales. Because we wanted to look at a generic fairy tale. But this time, I asked them to really key on their personal responses, "What were they thinking about when they read?", or "How did the book make them feel?", or "Did they make the connection?", I think you mentioned that too. It's kids connecting, right away to their personal lives, I think that's the first response. What really is interesting is that I ask kids when they share it to read directly from their logs, because what I find would happen is that when I ask kids to share they would change what they are thinking, when they would listen to a few people, because they would start to feel that, "Oh what I felt isn't the right response," especially if they haven't been in that kind of a program before, so I said no, you read right from your log, and they are writing their log before they have a chance to talk to anybody.

María: Is this done daily, then? They read, respond, and share what they read, and then they decide how much they are going to read?

Karen: Well, some kids read a chapter book, somebody asked, "Well, what do you do if you can read more?" And I asked the kids what they felt about that. And they decided that it wouldn't be fair if somebody had read ahead because they'd know things that would color their perceptions of what they were going to say about the book? So they decided that they could not.

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María follows up with additional questions about final projects, literature sets, and the size of groups, and about how much modeling Karen does for the students to learn her system. Karen also reveals that she does not group students by ability or level of reading, but by interest or activity, and that she gets the students used to the idea that she, the teacher, is a co-participant in the class.

> María: Do you ever like model those (activities)?
>
> Karen: Lots of times.
>
> María: So you're going over how to do things (with) them?
>
> Karen: Especially this early in the year. But I come in at a participant level, and that's hard for children because I found that kids sort of sit and wait for you to ask them questions. And I sit there and wait, and I wait, and they look at me, and I wait some more. And sometimes I'll say something, but I usually don't ask a question. It's a comment like, "This is what I thought" or "It struck me that".
>
> María: What about those final projects, do you do things as a class? Did you come up with a chart together? What did you say that you had done, story maps?
>
> Karen: We had done story maps, but they had done those in groups.
>
> María: How did they learn to do that?
>
> Karen: We did one all together as a class. I modeled for the whole class. We had read a series of books aloud, three different versions of the Pied Piper and then we all worked together on the story map. I cut out the pieces but the kids told me what they wanted on the map and where it had to go. And then they broke up into groups and did their own map. That was a hard process, that was the first really cooperative thing we had, there were some real struggles.
>
> María: The children decided what group they were going to be in by signing up?
>
> Karen: We don't do any groups by levels or anything.
>
> Ana: So you have all kinds of readers in the groups?
>
> Karen: Yes, and I've worked with my kids on a couple of ways to support each other...(Study Group Transcript, 11/14/89).

Throughout the session, and in later sessions, Karen became the informant/mentor, describing how she arranged her classroom and some of the principles of instruction that she followed.

Insights into Change

The study group progressed along the lines described above. About a month later, as a result of trying out innovations in her classroom and discussing her work with peers in the study group, María was able to report quite perceptively on her process of change. Change, she says, is a gradual process, but it must begin somewhere, no matter how modest the change may be. María describes:

> I think that you can start without the thought that you are going to let go completely; instead of waiting for the perfect time, because I thought for such a long time, that I wanted to do literature in my classroom, probably most of last year, and I was just waiting and waiting for the perfect time and I did not really know enough ...but instead of waiting for ever I just started with the basal, I did not have literature sets yet, but I just started with the reader, changing the program, and just having them get together and talk about the story instead of doing round-robin reading or doing skills. And

Here María M. describes how she gradually let go, proceeding in incremental steps. Reflecting upon her practice, she has become consciously aware that her approach to teaching is changing.

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> they started just sharing their insights, their thoughts, their connections to the story. So I don't think you have to start thinking that you are going to know how to do it and bingo, it's going to work wonderfully.
>
> I just started very slowly. Each week I was adding a little bit more. The following week I gave them an interview, a reading interview, and then I gathered literature sets. I took them to the library, they chose books themselves, but I gathered materials, and it was slow and I was starting to do it as I was learning. I don't feel that I know everything you need to know even now, but I don't think that you should wait, I think you should just start.

She then describes how conscious she's become of the difference between how she is teaching and how she would like to teach, finding that the key is to share control of the classroom with the students, while trying to take advantage of their interests in developing the academic activities. We quote again from the transcript:

> Last Thursday when I came to the (study group) meeting, right away the next day, I said, I am going to do that. Because we were talking about how we need to start with the children's interests and I was telling Elizabeth here I had imposed a research project on constellations, I gave them worksheets and everything. Here I am changing in some ways with some of the writing and reading, but yet I had not even thought of it, I just felt this would be a neat way to show them the format....I realize that here they could learn so much more about astronomy and here they have so many interests, and I had started them thinking about everything they knew, and they had written it into their logs, but I did not take it a step further. So that same evening we met and the next day we made a semantic web of everything they knew and then on another chart they wrote down everything they'd like to know, and there were so many things they wanted to know, we went to the library and they just attacked those books, and they were just sitting around throughout the whole library just looking at things that interested them, and I thought how much nicer, we did follow the format of the constellations. I told the students: you remember how there were questions about the constellations. Now you think of the questions you have on this topic, and it was just wonderful to see how interested they were. So I don't feel I know this whole thing about theme cycles, there is that much more to learn, there is so much more to study, how to take it to its full potential, but this is the starting point, starting from where (the students') interests lie (Transcript, 12/12/89).

As María describes it, instructional change comes from attempting new teaching practices as they are being learned; as they make sense theoretically, they become practical in the classroom. María was becoming consciously aware of her changes and was able to articulate these changes for her peers in the study group, becoming a source of important information and a facilitator for the other teachers. Although other teachers may approach change differently, the study group can serve as both support and catalyst for their efforts.

María M. Extends Her Experimentation

As she gained confidence in her ability to make positive changes in her classroom, María decided to extend her experimentation. She found additional support and inspiration from one of her graduate courses and from the assistance of one of the researchers (Elizabeth). She had asked for

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some help with an assignment for the class, and Elizabeth volunteered to assist her. While working on the course assignment with Elizabeth, María mentioned that she was planning to change the classroom environment and initiate literature studies with her class. Elizabeth discussed with her different possibilities and plans that María could make to implement in her classroom. Within a week María had selected a literature set and each of the students had chosen a book. The students were then grouped for reading and discussing the books. In follow-up observations, we recorded some of the classroom changes:

> María was asking the students to get into their groups to read for a while, then she brainstormed (in Spanish) with the children the types of writing or response activities they could include in their response journals. When they concluded the list, she asked the students to begin their reading. The students arranged themselves into small groups in which each of the students were reading the same book. The groups consisted of three or four students. Some of the children read silently, while others read aloud together or designated an oral reader for the group. The atmosphere was very relaxed, and the children were self-directed and involved in their books. As they read, the teacher walked around the classroom, the students asked her questions, she provided some guidance to assist the students with their joint reading, and she posed questions to the students. Some of the students shared portions of the stories with her (ES, 3/7/90).

Here the researchers describe the ways María M. began to use brainstorming and related approaches to transform the classroom. The atmosphere of the classroom now seems more like the Sunshine Room than the one described before María joined the study group. As her practice changes, María also becomes more aware of the enthusiasm that previously reluctant readers bring to the new situation.

As a direct result of the instructional changes, María discovered that some of her reluctant readers became very involved with the books and the group activities. She mentioned how one boy who had been reading short stories and pictures, and one who she suspected did not really read the books, had chosen a chapter book, and taken the book home and read it. The following excerpt from the notes tells a similar story:

> A boy came up to María and told her that he had finished reading his book. María asked him what he thought about the book. He responded that he found the ending very sad, because the dog had died. He described how the dog had died, and said that he felt very bad. María asked him what he was going to do now that he had finished the book, and he told her that his group was going to talk about it. After the boy returned to his seat, María turned to me, and told me that this particular boy had always been a reluctant reader, and would avoid reading. He would choose simple books with pictures. He had just started this particular chapter book two days before and had already completed it. Since he had discussed the ending she was sure he had read it. She discussed how before when she assigned the basal stories, she would not see him reading, and when she asked him what he thought about the story or what it was about, he didn't know. Now, she commented that he came to her to talk about the story and how fast he had read it. She also commented that this was the first chapter book he had ever read. María shared that she had always seen the students rush through their stories in the basal. She would assign stories and have the students read them silently to themselves. She stated that the students would barely sit down with the book and then get up and say they were finished. She never trusted that they read the story and that they understood it or got anything out of it. Now, she is feeling very positive and developing trust in their reading. She is also participating in literature studies with her students (ES, 3/7/90).

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In her description we see a connection among the discussions and readings in the study group, the teacher's attempts at developing a new approach to literacy in her classroom, and the students' uses of literacy. In particular, as she described it, she has gained a new perspective on her students, especially those not motivated by her previous arrangements. Obtaining positive change in the classroom is an indispensable element of the study group, convincing the teachers that they have the ability and the wherewithal to develop and implement innovations. María's comments are again very revealing and insightful. Notice that she relates the way she is learning about how her students are learning:

Importantly, María's involvement with the study group gives her a new perspective on her students. The study group has successfully given her the confidence to change her practice to meet the needs of her students.

> Where I need to go with who I am as a teacher, to learn, to just keep reading more, and be willing to talk about (my work) with other teachers, in classes, and with the study group as to how things can be done differently. You know, just like I said, reading that book alone, it was great, easy reading, and it had such neat ideas, there are things we've done (in the classroom) but it just brings it (the meaning-based instruction) into focus, and it gives you more ideas within that same framework....And by reading that book, I have learned more as to how I can use those tools, you know, the interview and the report writing, and what comes before that. That's the key, I think we have to keep doing our professional reading, make time for it, and make time to plan with other teachers and talk with other people, and that's how we learn, and I'm realizing that's how the kids learn.

What are the Implications of María's Experience?

María's case study illustrates the potential of a teachers' study group in serving as resource, support, and catalyst for change. Just as the starting point in the household analysis is on people's activities and how they are connected to broader concerns, we have learned that the starting point in our classroom work must be with the teachers' interests. Rather than imposing a curriculum, or developing prescriptive ways of getting teachers to use household knowledge in their lessons, ways that would disappear when the project concludes, we opted to explore how to develop innovations that would come from the teachers and could feasibly be sustained after the formal research project is over.

The researchers conclude that the study group promoted change and that the change in María's practice was sparked by the other teachers. But change, they observe, is not inevitable nor easy.

Our case study also shows that the progression towards new expertise and change is not uniform, easy, or inevitable. There are multiple paths to change and these are shaped by the specific circumstances of teachers, their beliefs or conceptions about teaching and learning, and the nature of the support they receive to confront problems they may encounter. Our next case study shows a different approach at changing practices.

Mobilizing Funds of Knowledge: Ina A. Brings the Household into the Classroom

The final case study traces Ina A.'s adaptation of the "funds of knowledge" approach. In her fourth year of teaching, Ms. A was ready for change. First she joined the study group, where she learned about other teachers' experimental approaches. Next she introduced a unit about construction and building.

This final case study involves the work of Ina A., a 6th grade bilingual teacher (from Moll & Greenberg, 1990). In many respects, Ina's classroom contained all of the elements necessary to experiment with literacy instruction. Although she followed the assigned curriculum, she deviated often to implement supplementary activities. For example, she used the assigned basal reader but supplemented the basal with novels, newspaper and magazine stories, and poems. She also had the class write often, including poems, short stories, narratives and descriptions, but reported that the children were reluctant writers, not an unusual observation. The teacher joined our after-school setting already sharing our belief that the use of outside, community resources could give more meaning to the

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learning experiences of the students. She mentioned that the "parents and children will see the role of the community (in education) as something that is worthwhile." Ina was, as she put it, "dispuesta al cambio," [ready for change]. She was concerned with how parents perceived the school, and believed that parents often felt that they didn't belong in the school. She was convinced, however, that parents were interested and willing to help.

A Biographical Note about Ina A.

Ina teaches sixth grade in a school in the same general community as María and Karen, and a short distance from the school where we conducted the study group. She has approximately 30 students in her class and they are predominantly Spanish-dominant, Mexican children. Along with another teacher, she is responsible for Spanish reading for the intermediate students in her school. This is Ina's fourth year of teaching. She is a native of Mexico and has been living in Tucson for approximately 5 years. She studied at a university in Monterrey, Mexico, but obtained her teaching certificate in Tucson. She has been at her present school for two years.

We will now describe her work in what we called the "construction" module or theme unit. She got the idea for the module from the work of another teacher participating in the project who was experimenting with an activity centered around construction and building, a theme of interest to the students. Construction, it also turns out, is one of the most prominent funds of knowledge found in the homes. Ina decided to replicate the activity in her classroom in an attempt to integrate home and school knowledge. Her work was one of the most successful and ambitious literacy innovations developed in the project, and we believe it serves as a prototype for other teachers interested in combining classroom literacy activities with household and community funds of knowledge.

Ina A. Introduces the Construction Module

The teacher introduced the idea of the construction theme unit to the class and discussed with the students possibilities for research on this topic. The teacher believed, however, that the work required to conduct the unit would be more in depth and extensive than anything they had done before. For the teacher, the unit clearly represented a new challenge for her and for the students.

In the first phase, students drew upon library resources in their research about construction. They wrote essays and stories based on their research and built model houses.

After introducing and clarifying the idea of the theme unit, the teacher asked the students to visit the library to start locating information on building or construction. In particular, the students obtained materials in either English or Spanish on the history of dwellings and on different ways of constructing structures. Through her own research in a community library and in the school district's media center, the teacher identified a series of books on construction and on different professions, including volumes on architects and carpenters, and decided to use them as part of the module. The students built a model house or other structure as homework and wrote brief essays describing their research or explaining their construction. In the following example, two students collaborated on a story based on the details of their model, inventing a character named María, whose father constructs houses:

> La casa de María está en un pueblo lejano y está hecha por su padre. La casa de María tiene dos cuartos un cuarto para su mamá y papá. El otro de azul es de ella. Su cuarto no tiene nada ni de sus padres. La sala tiene dos sillones y una mesita en el medio. El baño es chico y es ancho no es lujoso lo unico lujoso es un espejo chico. La cocina tiene una estufa poco

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lujosa y tiene una mesa. La casa fue hecha de troncos de árboles muy buenos y bonitos. María y su familia estan contentos en su casa tienen dos cuartos, un baño, la sala y la cocina. También tienen electricidad gas y agua. Por fuera de la casa esta lujoso y bonito. Tiene un río tres árboles con piedritas alrededor. Ellos tienen poco dinero pero su papá trabaja haciendo casas. Asi que viven bien. A nosotros nos gusto la cocina, la sala, las camitas, los árbolitos y nos gusto como la hicimo estuvimos una hora haciendo la casita. Nos gusto y aprobechamos el tiempo que estuvimos haciendola. Nosotros creemos que ustedes también aprobecharon su tiempo en la de ustedes.

[María's house is in a far away town and was made by her father. María's house has two rooms a room for her mom and dad. The other blue one is hers. Her room has nothing nor her parents'. The living room has two couches and a small table in the middle. The bathroom is small and is wide it is not luxurious the only luxurious thing is a small mirror. The kitchen has a stove lacking in luxury and has a table. The house was made from very good and pretty tree trunks. María and her family are happy in their house they have two rooms, a bathroom, the living room and the kitchen. They also have electricity gas and water. On the outside the house is luxurious and pretty. It has a river three trees with little rocks around them. They have little money but her dad works making houses. So they live well. We liked the kitchen, the living room, the little beds, the little trees and we liked how we made it we spent an hour making the little house. We like it and we made good use of the time that we spent building it. We believe that you all also made good use of your time in making yours.]

Another student compared his model to the human body, note the use of metaphors and precise construction terms such as "hormigón armado"[reinforced concrete]:

...sin barillas, no podrias mantener en pie una casa. Caerías al suelo como una mareoneta sin hilos que la sostenga. Una casa sin esqueleto se caería del mismo modo. Sin embargo, el esqueleto de una casa no esta constituido por huesos como los nuestros, Sino por hormigón armado. Para Construir una casa necesitas, antes que nada, hacer los cimientos, es decir, una sólida base de hormigón. Sobre ésta se levanta el esqueleto de la casa y lla está construida. Nosotros utilisamos carton goma y picadientes para hacer una casita primero estabamos pegando los puros picadientes y se caian entonces decidimos ponerle carton y luego le pegamos los picadientes y no se cayo.

[...without steel rods, you couldn't maintain a house upright. It would fall to the ground like a puppet without strings to sustain it. A house without a frame would fall the same way. Nevertheless, the frame [esqueleto, skeleton] of a house is not built by bones like ours, but by reinforced steel. To construct a house one needs, first of all, to make the foundations, that is to say, a solid base of reinforced steel. On top of this the frame is build and now it is constructed. We utilized cardboard glue and toothpicks to make the little house we were first glueing only the toothpicks and they would fall then we decided to add carton and then we glued the toothpicks and it did not fall.]

In short, the teacher was able to get the students to write about their experiences and in the process improve the activities she learned about at the after-school site.

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Mobilizing Funds of Knowledge

The teacher, however, did not stop there. She proposed that the class invite parents as experts to provide information on specific aspects of construction and mentioned that she had already invited one father, a mason, to describe his work. She was particularly interested in the father describing his use of construction instruments and tools, and how he estimated or measured the area or perimeter of the location in which he works. The teacher reported that the children were surprised by the thought of inviting their parents as experts, especially given some of the parents' lack of formal schooling, and were intrigued by the idea.

The visit by the first parent was a key to the unit. Neither the teacher nor the students were sure what to expect. The teacher describes:

> The first experience was a total success... We received two parents. The first one, Mr. S., father of one of my students, works at building portable classrooms. He built his own house, and he helped my student do his project. He explained to the students the basic details of construction. For example, he explained about the foundation of a house, the way they need to measure the columns, how to find the perimeter or area...After his visit, the children wrote what they learned about this topic. In was interesting to see how each one of them learned something different: e.g., the vocabulary of construction, names of tools, economic concerns, and the importance of knowing mathematics in construction.

In the second phase, Ina extends the approach and invites people from the community to the classroom. By drawing upon these funds of knowledge, she begins bridging the community and the classroom in the ways suggested by the researchers.

Building on her initial success, the teacher invited other parents or relatives to make their expertise available to the class. The teacher notes:

> The next parent was Mr. T. He was not related to any of the students. He is part of the community and a construction worker. His visit was also very interesting. He was nervous and a little embarrassed, but after a while he seemed more relaxed. The children asked him a great number of questions. They wanted to know how to make the mix to put together bricks...He explained the process and the children were able to see the need for understanding fractions in mathematics because he gave the quantities in fractions. They also wanted to know how to build arches. He explained the process of building arches through a diagram on the board, and told the students that this was the work of engineers.

The teacher also invited people she knew to contribute to the class. What is important is that the teacher invited parents and others in the community to contribute substantively to the development of lessons, to access their funds of knowledge for academic purposes. Theirs was an intellectual contribution to the content and process of classroom learning. The parents came to share their knowledge, expertise and experiences with the students. This knowledge, in turn, became part of the students' work or a focus of analysis, as illustrated eloquently in the following unedited English writing sample from one of the girls in the class:

> Mr. S. came today and in a way he taught us how to build a house. He taught us how to measure for the materials and which materials we needed and how to get the best only. He also taught us that if you buy an expensive house from a company it may be made from real cheap stuff and just maybe it might fall apart. And that if you build a house without a ridge or varillas it may tip over and just fall apart. When you are putting the ridge you must put a joist hanger or the ridge will fall. Also you must put cement first then you put in the varillas. For the wall the plywood fir is better than

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This writing sample illustrates a student's understanding of the building process after the visits to the classroom from the community experts.

> the waffle board. But the waffle board is cheaper than plywood fir. And that for the door and the window you put a metal board for it could hold the material or blocks. He also said that if you paid another worker that isn't from the company he might cheat you, like tell you to pay by the hour. And then they'll take a long time. So then you have to pay them more because they worked more hours. If you do it yourself you might save, I said you might because if you don't know you will be wasting a lot of money because will not be knowing what you are doing... and if you are paying the worker how much both of you decided they might do it real fast. He also said that you'll need to put at least 3 or 4 feet of cement above the ground so that termites do not go in. And that the bottom of the plywood or what ever you are using people put some termite poison. But well it is better to have a brick house and to build it yourself because you might save a lot of money.
>
> If you do not know how to make your own home or just a storage room like Mr. S. you might want a friend to help. You should also know the size or amount of the wood, bricks, nails, or any other supply that you might need so that you don't spend a fortune or a lot of money on some dum storage room that you didn't even do right and that in a week it'll fall down.
>
> So if you are wanting a house or just a room make sure you know what you're doing. Take my advise I listened to someone who does know. Don't try to do it yourself because you'll probably end up with nothing because it'll probably fall. He also showed the size of some nails and other supplies.

Another girl wrote, although in less detail, about the same visit, and the visitor happened to be her uncle:

> My tio Mr. S. came to our class to talk about the facts of house making. My tio is a carpenter. He told us about how some people are Honest and some people are not Honest. Most honest people are like your family and friends. After you put some bricks you put fiber glass and then put tirmite liquet and then some serock. My tio said its better to build a house out of brick instead of wood. There are some word he told us I only remember is Ridge, Fiber glass, Stager, Bolts, Joist Hanger, Serock, plywood, waffle board, and panel. The elictricion and pluming gos threw the bottom of the ground. these days houses are made easy and cheap. I think it is better to make a house out of brick.

Obviously these visits were not trivial, they mattered for the development of the lessons. As such, these invitations and classroom visits helped create a new instructional routine in this classroom which helped the teacher and students exceed the curriculum, stretch the limits of their writing, and expand the knowledge that formed lessons. In total, about 20 people visited the classroom during the module implementation. The teacher utilized at least seven different sources of funds of knowledge:

- The students' own knowledge
  The first step in the module activities was for the students to discuss and present what they knew about the topic and to visit the library to search for written sources that would help them elaborate their knowledge.

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- The students' parents and relatives
  The first visit to the classroom was one of the students' parents, as we described, and in subsequent activities the parents became a regular source of information and assistance with the academic tasks.
- Other students' parents or relatives
  The teacher also invited parents of students not in her class, thus extending beyond her classroom the immediate network of knowledge available to her and to the students.
- Teacher's own network
  In extending the module the teacher used her own social network as a resource of knowledge inviting relatives and friends to participate in the lessons.
- School staff and teachers
  The teacher also used the expertise of others in the school, including teachers and other staff.
- Community members without school age children
  The teacher also invited other members of the surrounding community who were not necessarily part of the children's or her immediate social network.
- University faculty and graduate students
  The teachers used the knowledge she gained from the university personnel.

Ina A. draws upon seven funds of knowledge in implementing the construction module.

As we will show next, these social networks became a regular feature of classroom instruction.

The Unit is Extended to Larger Questions of Community Planning

In the extension of the module, the students consider the problems and challenges of building an entire community.

Establishing social networks to access funds of knowledge for academic learning, generated important secondary activities in this classroom that went far beyond the initial module. For example, the class invited one of the students' brothers, studying to be a draftsman, to present construction plans to the class and explain how he developed them. Stimulated by the presentation, the students decided to extend the module by going beyond the building of individual structures and combine them to form a community. But developing a model of a community with its streets, services, parks and private and public buildings required considerable research. The students and the teacher followed two strategies. One is that they returned to the library to do research. They acquired additional information on what a town or city requires for its development, for example, obtaining water and providing electricity. To supplement the library research, the students conducted observations in their own communities to determine what other aspects of urban life they may need to incorporate into their model. The teacher provided the class with a large poster of a town, which she found during her own research, and the students placed it on the side wall of the class, near their models. As was now the routine, part of the classroom task became for the students to present their research in writing and to share it orally with the class or with others in the school. Consider the following example:

> There are many people that work in construction. First there is a de ner. She designs the way the inside of the building will look like. She finds the best quality furniture to match the color of the room, she also gets the rugs, curtains etc. to

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match the color. The architecture designs the building. He must figure out the length, width and how many rooms there will be.

The estimators figures out how much everything will cost. He tries to find the best, least expensive tools for the job. he also has to extimate how long will it take to finish, because every day they must pay money.

The carpenter does all the wood work. He designs all the wood work. He designs the frame to start the building. He also does sticks so when they pour the concret it is straight. The electrician puts the wires inside the walls for electricity. He also does the outlets for connecting things, to have lights and other needs.

The plumber is someone who does drains. He does bathroom wires and he puts a hose like, so that water can come out of a fountain.

An important consequence of the module was how it shaped the students' and the teacher's perception of the parents and the community in general. In a sense, the teacher convinced herself that valuable knowledge exists beyond the classroom and that it could be mobilized for academic learning. She also understood that teaching through the community, as represented by the people in the various social networks and their collective funds of knowledge, could become part of the classroom routine, that is, an integrated part of the "core" curriculum.

Ina A. Generalizes to Other Parts of the Curriculum

The module started as a temporary and supplementary activity, but as the teacher extended the module, it started becoming more central to the class' activities, a vehicle to accomplish the teacher's curricular goals.

In this section, the researchers note how community members were invited to the classroom as part of an exercise in writing biography.

The two activities we describe below were developed by the teacher and students, independent of our assistance. As such, they represent a generalization of the construction module activities into the curriculum. This is a key point. The module started as a temporary and supplementary activity, but as the teacher extended the module, it started becoming more central to the classroom's activities, a vehicle to accomplish the teacher's curricular goals. The teacher generalized the module by incorporating the "core" curriculum within the module's activities. This generalization illustrates the extent to which the teacher and her class had taken over, appropriated, the initial module's activities and created something new to address the needs of this specific classroom. An example will illustrate this process of appropriation.

The teacher had attended an in-service training session on writing and was provided with a package of materials on possible writing activities. She noticed that one of the activities concerned writing biographies and deliberately chose this topic as a theme to reinforce the instructional process involving funds of knowledge which the class had started with the construction module. The logic of developing this new module is what's of interest here. It depicts how the teacher re-created her own version of the module, and suggests how she was acquiring ownership of the procedures and goals of the activity.

The sequence of the module's activities illuminates these steps:

Ina A.'s class took seven steps in writing biographies.

- First, the goal of the activity was for the students to write a biography. The procedures included the students writing about the lives of people from different generations. The study materials included questions about people's activities as children, a topic that particularly interested the students. The teacher used the available language arts materials to train the children in how to interview others. The students also started to identify who they wanted to invite to the classroom for the class to interview and persons they could interview outside the classroom.

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- Second, as an extension of the materials, the students developed questions in Spanish and English that they could ask. These questions included asking about different jobs that people had done. This topic had become quite salient in the previous module, when they analyzed the division of labor that goes into constructing a building. The topic is also related to the identification of people's or households' funds of knowledge.
- Third, the teacher and the students invited people from three different generations representing the decade of the forties, sixties, and seventies. The teacher discussed with the person's invited the types of questions they could expect the students to ask.
- Fourth, during a four week period, a total of 12 people visited the class. These people were identified and contacted through the social networks previously discussed. In this instance, they drew people from all of the sources available to them. The children interviewed the people in both Spanish and English.
- Fifith, the students wrote summaries of the interviews highlighting specific questions or areas of interest to them.
- Sixth, students were then asked to interview two other people in the community that represented two different generations and to write a comparison based on their interviews.
- Finally, the students brought pictures from their families depicting different generations. These pictures were discussed in class and posted on the front board as a symbol of the students' research and the theme of study.

This process represents how the teacher re-applied in her instructional practice the principles that she learned implementing the initial module, and was able to do so independently, without our assistance. She picked a theme that was significant to the children and helpful to her in achieving the curricular goals. She also adjusted the packaged curriculum to include funds of knowledge not available within the classroom. This incorporation of funds of knowledge was accomplished by bringing into the classroom community people that could be reached and invited through the available social networks, but the teacher also used homework assignments to tap the funds of knowledge of the students' homes and other locations. Homework assignments were designed to make it easy for family members to participate since each assignment highlighted an aspect of one of the family's expertise.

The exercise involved considerable writing in both English and Spanish and made frequent use of the funds of knowledge in the homes and community.

All of the activities, from the planning and interviewing to the preparation of a final product, involved considerable reading and writing in both languages on the part of the students. As the students' writing samples suggest, literacy in English and Spanish occurred as a means of analysis and expression, not as isolated reading and writing exercises. To support the development of writing, and to enable individual assessments, the teacher organized peer-editing groups that focused on how to improve the writing to facilitate the clear expression of ideas, whether in English or Spanish. The teacher evaluated the students' progress by their ability to deal with new and more complex activities, and by their ability to read and produce more sophisticated writing to accomplish those activities.

Following this module, the teacher organized yet another module, this time, coinciding with the end of the school year, on career development. The topic evolved from the children's questions and work during the previous modules, as they came into contact with diverse jobs and family labor histories. Their guiding question was: What do you see in your

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future? Next to the board displaying the family pictures, the students and teachers developed posters depicting various jobs and professions. Through the social networks, they invited high school and university teachers and students to discuss various careers and how to enter them. They also visited local schools and interacted with professors and students. As with the other modules, the children used their reading and writing to mediate and analyze their interactions with the "living knowledge" brought into the classroom by their social networks or encounters within the community during their visits.

What Do I Do?

The case study examples presented above illustrate essential aspects of our approach, such as developing participatory, meaning-based literacy instruction where the intellectual level of the activity is always high, and where the teacher shares much of the control of the class with the students while guiding and assisting their developing uses of literacy as part of their own inquiry. We also highlighted the importance of creating a special setting to support teachers' thinking and intellectual work and provided a vivid example of how one teacher altered her practices to create a social network for teaching, characterized by community members contributions to her students school work.

Numerous factors will contribute to the success of this approach, but the key is to start with teachers meeting together in an after-school setting.

We now provide answers to the question 'How should I start if I want to apply these ideas elsewhere?' Our primary suggestion is to start with the teachers by developing an after-school setting to examine their practices. Such a setting can be fairly easy to implement by any school or district, as our experiences suggest.

Environment for Success

Here the researchers describe the workings of the after-school laboratory. The group developed its own path of inquiry which evolved during the course of the project.

Our study group—as we noted earlier—began with the idea of developing a place to discuss with the teachers the information we were obtaining about the households' funds of knowledge. On the average, ten teachers (we recommend four to six) met once a week for approximately two hours with two members of the research team (also teachers getting advanced degrees). Additional meetings during the week were arranged as needed. We usually met in the library of one of the schools participating in the project. However, we also met in other locations, for example, in a classroom where the teacher wanted to show how she was arranging the room, in a local restaurant where we held the meetings over dinner, at the university, and sometimes part of the group would meet at someone's house. Meeting weekly fostered the formation of new social relationships among the teachers (six of them worked at different schools) that would lead to the exchange of ideas and resources within the group, much like the household networks we were studying in the community.

The focus of the teachers' study group evolved as the year progressed and as the teachers became comfortable discussing their experiences and seeking assistance from each other. The original intention of sharing the household information with the teachers was adapted to the particular interests of the group. That is, rather than prescribe, for example, how to organize lessons that could tap into the households' funds of knowledge, we used the group to address the teachers' interests and concerns within their specific classrooms. The general concern of the teachers was the reading and writing development of the students and how to organize more productive lessons or classroom experiences that would take advantage of

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the students' abilities. Although our main concern was to have the teachers focus on the resources outside the classroom, they preferred to start by discussing the particulars of instruction within their classrooms. We followed their lead.

The researchers let the teachers set the pace, but they make their own philosophical positions about education explicit. After three months, the teachers begin to identify the kinds of changes in classroom practice they wish to make.

As the work progressed, we made our theoretical and ideological predilections quite clear: current instructional practices, with an emphasis on rote-like instruction, passive students, curtailed interactions, and low-level academic work, seriously constrain what children are able to learn and display intellectually. We favored meaning-based, interactive approaches to literacy instruction, where the children have considerable control over their learning, and where they are active users of literacy to accomplish high level intellectual tasks. Beyond its pedagogical merits, this approach provides ample opportunities to apply funds of knowledge in classroom practice, facilitating strategic connection between parents, their knowledge, and the students' academic work.

For the first three months of the study group, the teachers assessed what they wanted to change in their classrooms, read articles about literacy instruction and discussed how they could go about planning and implementing change in their classrooms. Those teachers who were already planning or conducting more "participatory" lessons, in which the students were reading for meaning with trade books, or using reading and writing in support of a broader classroom activities or theme studies, or taking advantage of the households' funds of knowledge as part of the students' academic tasks, discussed their work with unusual candidness, offered suggestions and advice as well as learned from the other teachers. In short, the teachers became resources for each other; they developed their own supportive network.

The researchers identified six resources that contributed to the effective functioning of the study group.

Our analysis reveals several resources for change that came together as part of the study group's work, they include the following:

- Peers: the role of other teachers in expanding each other's theoretical and practical development, and in providing a forum for interactions and reflections about practice and theory.
- Research literature: the important role of studying the literature about the study and teaching of literacy.
- Classroom analysis: the examination of practices developed in conjunction with the study group work, especially how the practices influenced specific students' literacy use.
- Mentor: the key role of a mentor in modeling and explaining alternative practices.
- Courses: the importance of university coursework in developing knowledge and in engaging in inquiry.
- Community: the use of the broader community as a source of ideas.

The study group served a variety of purposes, from supporting ongoing practices to being a catalyst for change in some classrooms. A major function, however, was in mixing these resources strategically depending on the needs of a particular teacher. We wanted to accommodate diversity, and help the teacher's forge their own paths to change. Throughout the experience, we did not want to impose but collaborate with the teachers. In most cases, we felt that the teachers already possessed much of the knowledge to change or improve their literacy instructional practices, the role of the study group is to assist the teachers' thinking in developing innovations.

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While school principals may not necessarily actively participate in the study group, their understanding and support of the process is key to making change possible.

Supportive Principals

The support and encouragement of principals greatly facilitates the process of inquiry and change. Principals are in an especially strong position to develop such study groups and assist teachers. In our experience, the principals were willing to support the study group and the experimental group as long as the teachers (and the principals) felt that the work would benefit the students. All of the principals were invited to attend the study groups, although only one came occasionally. Most of the teachers, in turn, were ambivalent about principals participating in the group, feeling that their presence would inhibit the discussions and the planning. As expected, some of the teachers believed that their principal supported if not encouraged attempts at innovation, while others felt that the principal was more concerned with routines and issues that were irrelevant to their teaching. All of the principals expressed that at a minimum they wanted to be informed about the work taking place in the classrooms. To our knowledge, none discouraged the teachers from meeting as a group or from trying to implement changes in practice that they felt would help the students.

All principals supported this project and the teachers' efforts. This support will continue: three of the schools are planning to initiate teacher study groups as part of their weekly routines, and two of these have agreed to modify their schedules so that teachers can meet every Wednesday afternoon in study group formats. The purposes of these study groups will vary, depending on the interests of the faculty and issues of concern within the specific school (e.g., the development of literacy in the students' first language). At a third school, we have been invited to help organize a study group to address the principals and teachers' concerns about fostering literacy in both English and Spanish.

Resources Required

We do not underestimate the difficulty of the process we have undertaken and the time needed to establish new literacy routines in classrooms. Time is a crucial element. Teachers need the time to meet and think and to conceptualize and implement change in their classrooms. The students need time to understand what is expected of them to assume much more responsibility for their schoolwork. Both teachers and students also need time to understand how to evaluate success, when the major criteria is what one does with literacy, rather than a score on a static test with little or no relation to sophisticated uses of reading and writing.

The researchers note that change will take time and caution against assuming that the process will be instantaneous. They also note that money is a welcome incentive, although they believe that ultimately teachers are more motivated by their desire to improve their own instructional practice and their needs to share ideas with colleagues.

Money is another important factor. We paid the teachers in the project for their work after school hours. They were remunerated for their participation in the study groups and in any other activity related to the project. Did paying the teachers make a difference in their rate of participation and in their willingness to try out a new approach? Possibly. We are sure that there were a couple of teachers who attended the study group because they were getting paid. However, there were also a couple of teachers who did not participate actively despite the attraction of money. The majority of teachers were pleased that they were getting paid as professionals participating in a research project. Yet we believe teachers were largely motivated to participate in an effort to help the children develop their literacy abilities. Most teachers are concerned about the students in their classrooms, want them to do better, and are willing to put in the time and effort to assist them. If they receive money or academic credit, it is welcome, but such incentives may not be necessary to have teachers meet, analyze their practices, share ideas and opinions, and try to improve the ways they are teaching. Most teachers still work in relative

isolation from other teachers. They want and appreciate the opportunity to meet with their peers to discuss and deal with substantive issues of instruction.

The most important resources for change cannot be purchased with money. We are referring to the ample funds of knowledge found in the households, and we are convinced, in every classroom. Through our household analysis we documented the existence of social relations or networks that connect households to each other and facilitate the transmission of knowledge among participants, as well as skills and labor. It is how these social systems of knowledge operate that has important implications for schooling. Our analysis shows that these social relations of exchange are multi-stranded and flexible in that they involve many people and can be arranged or re-arranged depending on the specific needs of the participants. Further, these exchanges are reciprocal. It is this reciprocity that establishes and maintains the necessary trust among participants to keep the system active and useful. The idea, put simply, is do the most with what you have, or what you can obtain with the assistance of others.

This concept of funds of knowledge has important implications for redefining the resources available for use in classrooms:

- Households as cognitive resources

  We used a sample of 30 households and documented the breadth of knowledge found among these homes. We can safely say that we can easily increase that list if we take into account every household's social network. Consider that every classroom has about 30 households or more represented by the children in the class, which makes accessible to every classroom a comparable list of funds of knowledge to use as resources for teaching. By adopting our funds of knowledge perspective, teachers can think of their students' households as potentially important resources for instruction—rather than, as it is sometimes erroneously held— impediments to learning. Furthermore, our perspective may encourage parents themselves to recognize that the knowledge they possess is relevant to their children's schooling.

- Teachers as resources for each other

  The main function of the study group is to facilitate the teachers' use of other teachers as resources. As we have shown, the study group facilitates the exchange of ideas, readings, theory, and knowledge about practices. In an important way, then, there is no difference between the way we are suggesting teachers work with students and the way we worked with teachers. We build on the teachers' interests and knowledge, use the literature and our social relationships as resources, and our literacy to support and extend our research activities. In doing so we respect the teachers as learners, and trust that they can be important agents of change in their classrooms and assist peers to do the same.

- Students as resources for teaching

  Every classroom is, in a sense, a community that contains its own funds of knowledge that are shared and exchanged by the students, and, if arranged, with the teacher as well. A key to our model is to implement an instructional approach that takes maximum advantage of the students' interests and knowledge to address academic goals.

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The researchers identify and explain the three kinds of resources available to the classroom.

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The research collaborators here urge teachers to think about the underlying assumptions of this project and to consider incorporating its value-orientation into their own practice.

We have identified several principles of instruction as part of the case studies (also see bibliography). Let us reiterate some of the main ones here, for they are an important resource for guiding practice.

- Always try to maintain the intellectual integrity of schoolwork by engaging students in academically challenging and interesting activities. Literacy develops most powerfully in response to the students' social and intellectual needs. The role of the teacher is to mediate and guide activities that fulfill those needs.
- Learn to trust that all students can be learners and respect their intellectual abilities. Teacher and students must co-create diverse and appropriate (authentic) circumstances for children (and teachers) to apply their considerable linguistic and intellectual resources. A students' lack of English fluency is never an impediment to full participation in academic tasks at the highest level possible.
- The goal of reading and writing is the making of meaning. Obtaining and communicating meaning (to others and to one's self) are the only legitimate reasons for using literacy.
- Treat bilingualism as a resource to expand the students literate and social worlds, which in turn creates new contexts for their thinking.
- The materials in a classroom, including texts, must be meaningful and relevant. These materials are tools and resources for learning, their purpose is to extend the amount and type of learning possible for any child.
- Consider the students' and their families' funds of knowledge as the bases for instruction, it re-defines the children and the adults in their lives as authentic resources for classroom learning, and facilitates an exchange of knowledge between homes and classrooms.

It is by combing resources of both classrooms and community, by providing teachers with the autonomy to be active thinkers about their work, and the support to make change feasible, that we can release the potential in teachers and students to make change a realistic possibility.

Barriers and Solutions

We perceive that the major barriers to implementing the work described in this chapter are tied to institutional beliefs and expectations. Teachers face various constraints including district goals that must be accomplished, and a curriculum to follow with the usual requirements of following a specific sequence with an emphasis on the teacher as the holder and transmitter of knowledge, and the students are relatively passive recipients of this knowledge. We have come to appreciate Langer and Applebee's (1987) conclusion that traditional instructional practices make introducing innovations into classrooms a very difficult task. In addition, many teachers have unexamined assumptions about what constitutes appropriate instructional practices, especially for language minority children, and about how children learn to read and write. These are assumptions that may represent formidable obstacles to implementing instructional innovations.

We are suggesting fundamental changes in the roles of teachers and the roles of students as learners. These changes emphasize the students' own engagement in the learning process, using literacy for the development of meaning, with the strategic assistance of teachers. These suggestions go against the grain in many schools and districts where, for example, there is an unquestioned assumption that Hispanic and other working class students are simply not capable of doing the type of work described herein,

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that they need and deserve low-level, rigid, skills training. The complaint may be that what we suggest may be fine with the students we worked with but that their specific situation is unique; that in their particular districts teachers and parents really do not care about the students' education and that, in any case, it will take the students a long time to be able to use literacy as part of their own research and learning activities, as we advocate. What we propose is simply not practical; that it does not fit easily within most classrooms as currently structured.

Another objection may be that a sufficient number of trade books and other materials are not available. One hears reasoning along these lines: 'Why start changing instruction, the teachers will not know what to do if they do not have some sort of guide or manual?' or 'Teachers are too busy with other matters or unmotivated to be attending study groups.' Or 'Everyone knows that teachers won't read anything that is too complicated, such as research articles or books; they must be told what to do, not asked to think.'

We are also aware that a major problem with projects such as ours, as Sarason (1982) has emphasized, is assuming that one can program change by the calendar. There is often an unrealistic time perspective of the difficulties of obtaining positive change in places as complex as schools and classrooms. Researchers are notorious for underestimating the difficulties of going from a good idea or promising results to sound classroom practice (see Gallimore, 1985).

Nonetheless, we believe that our experience effectively overcomes these obstacles and challenges. We suggest starting with the teachers' study group, as a setting for thinking and analysis, and by relating the study group to changes in literacy practices. The goal is for teachers to develop new frameworks for understanding their teaching and for developing changes in their practices that make sense to them and their students. Teachers need not work alone.

Our experiences suggests that there are many within the schools and within the community willing and eager to work for change by making educational use of the funds of knowledge. Our recommendation is to create social networks for change. The strategic involvement of others in the change process "is a matter that derives from the principle that those who are or may be affected by the change should have some part in the change process because only through such involvement can they become committed to the change" (Sarason, 1982, p. 294). Through the involvement, they come to see the change as their own. Children, teachers and parents—the groups most likely to be affected by changes—should be instrumental in bringing them about. The first strategy, then, is to seek and obtain the support of those who are essential for the proposed change. When teachers create a core group to help each other examine and redefine the problem and the resources available for action, they are beginning in a positive direction. When the teachers reach out and involve the principal, they are strengthening and building a broader constituency for change. By involving parents from the community in classroom literacy activities, the teachers root in the community constituency for change where it is likely to grow robust and flourish.

The barriers to these instructional innovations are largely attitudinal. The research collaborators here are defining the lines of a debate in the current policy dialogue about American education. One camp, which might be called institutional conservatives, may believe that minority students are not capable of meeting the intellectual challenges of this approach. Teachers, the institutional conservatives might hold, have little interest in designing their own curricula: it would be better to wait for textbook publishers to invent new materials. The authors challenge these assumptions and argue that the after-school lab is the best place to begin a process of innovation. But they recognize that change may not evolve as quickly as researchers would wish. So they urge teachers, students, and the community to begin forming a constituency for change.

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Before citing the results teachers could expect, the researchers make some observations about three factors surrounding the process of change. These three factors—dealing with the uncertainty of taking risks, the interdependence of teacher and student change, and being able to explain the work to others—all help redefine the role of teachers, and as a consequence what we can expect from students.

Results to be expected

Our approach calls for a re-thinking of the role of teachers and of the role of students as learners. We have emphasized the importance of the teachers working collaboratively with colleagues in analyzing their practices and in developing change within their classrooms. We have also emphasized the importance of viewing students as learners who actively use literacy to pursue social and intellectual interests and goals. And we have underscored the importance of local resources, what we refer to as funds of knowledge, in facilitating the teaching and learning of literacy.

We refer the readers to our case studies for specific examples of teachers and students at work. We relied on these case studies to help teachers reading this chapter experience these classrooms and study group so that they can visualize what to expect and how the ideas captured in the studies may relate to their own local settings and their own ways of teaching. In this section we will summarize what changes teachers and students can expect by referring back to what we learned from the case studies.

Three factors became particularly clear in the case studies. One is the difficulty of implementing change. There are no easy, quick, and neat prescriptions for change in education, and no guarantees for success. In attempting change teachers are challenging tradition. They can expect uncertainty, as they move into new terrain, and even fear of losing control over the students. Is the role of the teacher to provide information and implement a set curriculum, or is it to guide and support students in their own learning? Must teachers assign topics of study, or can the students pursue their goals and interests? As María pointed out in her case study, she had many more questions than solutions. She felt uncertain, did not know how to start, and there was no one there willing to tell her exactly what to do.

However, María was not alone, others in the study group were equally hesitant, while others seemed very confident about their work and what the students in their class could accomplish. María used the experiences and support of others and the information gained from articles to guide her initial attempts at change. But as she stated, even if one still has questions, one has to start somewhere, maybe by rearranging the classroom, maybe by taking into account the children's interests in developing a lesson plan, or by getting new materials for the students to read.

A second factor is that teachers never change independently of their students. As teachers attempt change, the students will react. We found that students need to go through the change process themselves, for they will also be challenging traditions on what it means to be a student or a learner in the classroom. And the students also need support and encouragement, and need to use each other as resources to understand what is expected of them. So the classroom will get noisier, but it will also get busier, as students start adjusting to new roles and more flexibility in their learning. The change will not be neat, and teachers will wonder if they are doing the right thing, or whether they should pull out the worksheets. Among the most difficult things for teachers to do, we should add, is to learn how to share the control of the classroom and how to trust that the students will learn. For the teachers in our case studies, sharing control and developing trust were keys to their success. They all mentioned these factors as essential to establishing a classroom community where the students gain control over literacy as part of their work. These same factors are involved in developing a social network for teaching, as Ina did in her classroom. There must be a willingness to share lessons with the parents and have them provide the content, and the trust that what they have to offer is worthwhile.

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A third factor is the importance of teachers learning how to articulate how they are teaching and why they are teaching that way. Teachers need to develop a language and vocabulary that helps them explain their decisions to others, including students, parents, and other teachers. Karen was always thinking out loud in her classroom, letting the students know what she was thinking, what she was writing, or what she was trying to accomplish. Similarly in the study group, she was able to share her thinking with her colleagues and explain her actions and decisions in the classroom. This language is developed through the reading of theory and the analysis of practice, and through the discussion of issues with peers and other colleagues.

These three factors, dealing with the uncertainty of taking risks, the interdependence of teacher and student change, and being able to explain the work to others, all help redefine the role of teachers, and as a consequence what we an expect from students. If our case studies are any indication, teachers can expect the following from their students:

Based on the case study, the researchers conclude that teachers are likely to see many of these positive effects upon students.

a) Greater involvement from the students, as their interests become legitimate topics of study.

b) More reading, including different types of texts, as reading becomes the essential activity to accomplish their projects and tasks in the classroom.

c) More writing and a greater variety of writing as writing becomes the essential way to communicate with others, make a point, or influence another's point of view, or a way to reflect and think about one's own work.

d) Stronger confidence as they realize that they are capable of advanced academic work and that they can take charge of their own learning and explore new areas of study either independently or with the teacher's or their peers' help.

e) Effective use of their bilingualism as a resource for thinking as they understand how knowing two languages expands one's ability to enter new social and literate worlds.

f) Eagerness to display their knowledge to others through activities or exhibits that they have conceived and developed.

g) More fluent articulatation of their experiences and learning as talk becomes a cornerstone to the classroom's functioning.

h) Attempts to relate their classroom learning to what occurs in their communities as they start making connections through their schoolwork and through the participation of parents and community members in their activities.

What can teachers expect? The most difficult challenge for the teachers is to seriously question their ways of teaching and to develop new practices that make sense to them and help their students. In doing so they can expect the following:

In terms of the teacher's own development, they would be likely to see six effects.

a) To understand how their practices limit or facilitate their students' academic development.

b) To give academic goals top priority, especially if the classroom contains limited English speaking students.

c) To share control of the classroom with the students, where the students' interests and goals count as much as the teacher's.

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d) To think of others, especially parents, as resources for their teaching, and to share the responsibility for teaching with others.

e) To emphasize student questions over teacher questions, and active learners over passive students.

f) To evaluate students on the basis of real uses of reading and writing, how they develop their activities, and the academic quality of their products.

Concluding Vision

We started the project convinced that there were ample resources in the students' community that could be used to help improve literacy instruction. We set out to document these resources in terms of the funds of knowledge found in households and were struck by the breadth of the knowledge found in these homes and by the importance of social ties in making this knowledge available to others. Social processes and cultural resources of all kinds are needed to help households subsist or get ahead.

The researchers reiterate the basic points of their research findings. First, they were struck by the breadth of knowledge found in working class and language minority homes. Second, in the most robust classroom environments students were actively engaged in learning materials that had a cultural resonance. These classrooms in fact had the same vitality as the household. Next the researchers realized that a powerful model of education for literacy could be fashioned if teachers would draw upon the community's funds of knowledge.

We soon realized that the insights gained from studying households held special relevance for the study of education. But we also realized that household funds of knowledge could not simply be imported into classrooms, especially as currently organized. We needed to work closely with teachers to figure out how to create circumstances where these funds of knowledge would become legitimate resources for teaching and learning. We formed an after-school setting where we could develop innovations and soon learned that any initiative for change, and the bulk of the work to make it happen, had to come from teachers. The after-school site became a teachers' study group, where teachers could share their funds of knowledge about teaching and create a social network among themselves. We were impressed by the willingness of some teachers to try out innovations, the healthy skepticism of others, and the desire by all to do what's right with the students.

Meanwhile we observed in classrooms, and realized that under the best conditions, those classrooms where the children were eagerly using literacy to explore and understand issues of interest to them and the teacher, these classrooms served as good analogues to the households: very different settings but both using social processes and cultural resources of all kinds to get ahead. It is here, in the strategic combination of resources to help students learn and develop, that we see the greatest potential for change.

Olson (1987) has captured well this relationship between cultural resources and literacy development that is at the heart of our work:

> "For literacy to function as an intellectual resource, it must involve learning the means to exploit the resources of a literate culture including its literary, religious, scientific, philosophical and governmental resources....to become literate is to gain access to the valued resources of the culture. Learning how to understand and exploit these resources is something that begins long before children enter schools, yet schools are the primary means at the society's disposal for making those resources broadly available (p. 7)."

Our basic recommendation to others wanting to explore our ideas elsewhere is to start with the teachers: form a study group that can become a center for thinking and for action. Study group meetings can be held practically anywhere and at any time, they are cheap to run, and interested others, parents as well as teachers, can be asked to join and help. And it is in working with others to help change classrooms for the better, to help mobilize funds of knowledge for learning, that teachers change themselves.

Contacts and Materials Available

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The following reports and papers are available.

Moll, Luis C., Vélez-Ibáñez, C., Greenberg, J. (1990). *Community Knowledge and Classroom Practice: Combining Resources for Literacy Instruction.* (Final Technical Report, Innovative Approaches Research Project.) Arlington, VA: Development Associates, Inc.

Greenberg, J. B. (1989). *Funds of knowledge: Historical constitution, social distribution and transmission.* Paper presented at the annual meeting of the Society for Applied Anthropology, Santa Fe, NM.

Moll, L. C., & Greenberg, J. B. (1990). Creating zones of possibilities: Combining social contexts for instruction. In L. C. Moll (Ed.), *Vygotsky and education.* Cambridge: Cambridge University Press.

Moll, L. C., Vélez-Ibáñez, C., & Greenberg. J. (1988a). *Project implementation plan: Community knowledge and classroom practice: Combining resources for literacy instruction,* (IARP Subcontract No. L-10, Development Associates). Tucson, AZ: College of Education and Bureau of Applied Research in Anthropology, University of Arizona.

Moll, L. C., Vélez-Ibáñez, C., & Greenberg. J. (1990). *Final report: Community knowledge and classroom practice: Combining resources for literacy instruction,* (IARP Subcontract No. L-10, Development Associates). Tucson, AZ: College of Education and Bureau of Applied Research in Anthropology, University of Arizona.

Vélez-Ibáñez, C. G. (1988). Networks of exchange among Mexicans in the U.S. and Mexico: Local level mediating responses to national and international transformations. *Urban Anthropology, 17*(1), 27-51.

Bibliography and Works Cited

Anyon, J. (1980). Social class and the hidden curriculum of work. *Journal of Education, 162*(1), 67-92.

Berliner, D. C. (1985). Laboratory settings and the study of teacher education. *Journal of Teacher Education, 36*(6), 2-8.

Cazden, C. & Legget, E.L. (1981). Culturally responsive education: Recommendations for achieving Lau Remedies II. In H.T. Trueba, G.P. Guthrie, K. Au (Eds.), *Culture and the bilingual classroom ethnography*. Rowley, MA: Newbury House Publishers, Inc.

Cochran, C. (1989). *Strategies for involving LEP students in the all-English medium classroom: A cooperative learning approach*. Washington, DC: National Clearinghouse for Bilingual Education.

Cole, M. & Griffin, P. (Eds.) (1987). *Contextual factors in education*. Madison, WI: University of Wisconsin, Wisconsin Center for Education Research.

De La Rosa, D. & Maw, C. (1990). *Hispanic education: A statistical portrait 1990*. Washington, DC: National Council of La Raza.

Edelsky, C. (1986). *Writing in a bilingual program: Había una vez*. Norwood, NJ: Ablex.

Farr, M. & Daniels, H. (1986). *Language diversity and writing instruction*. Urbana, IL: National Council of Teachers of English.

Gallimore, R. (1985). *The accommodation of instruction to cultural differences*. Paper presented at the University of California Conference on the Underachievement of Linguistic Minorities, Lake Tahoe, CA.

Goldenberg, C. & Gallimore, R. (1990, April). *Local knowledge, research knowledge, and educational achievement*. Paper presented at the Annual Meeting of the American Educational Research Association, Boston, MA.

Goodlad, J. (1984). *A place called school*. New York: McGraw-Hill.

Goodman, K. (1986). *What's whole in whole language?* Portsmouth, NH: Heinemann.

Graves, D. (1983). *Writing: Teachers and children at work*. Exeter, NH: Heinemann.

Greenberg, J. B. (1989, April). *Funds of knowledge: Historical constitution, social distribution, and transmission*. Paper presented at the Annual Meetings of the Society for Applied Anthropology, Santa Fe, NM.

Heath, S.B. (1983). *Ways with words: Language, life and work in communities and classrooms*. New York: Cambridge University Press.

Jacob, E. & Mattson, B. (1987). *Cooperative learning with limited-English-proficient students*. Report prepared for the Office of Educational Research and Improvement, U.S. Department of Education by the Center for Language Education and Research. Washington, DC: Center for Applied Linguistics.

Kagan, S. (1986). Cooperative learning and sociocultural factors in schooling. In Bilingual Education Office, California State Department of Education (Ed.), *Beyond language: Social and cultural factors in schooling language minority students* (pp. 231 - 298). Los Angeles: Evaluation, Dissemination and Assessment Center, California State University.

Laboratory of Comparative Human Cognition (LCHC) (1986). The contributions of cross-cultural research to educational practice. *American Psychologist, 41*(10), 1049-1058.

Langer, J. (1987). A sociocognitive perspective on literacy. In J. Langer (Ed.), *Language, literacy and culture: Issues in society and schooling* (pp. 1-20). Norwood, NJ: Ablex.

Langer, J. & Applebee, A. (1987). *How writing shapes thinking: A study of teaching and learning* (NCTE Research Report No. 22). Urbana, IL: National Council of Teachers of English.

Lara, J. & Hoffman, E. (1990). *School success for limited English proficient students: The challenge and state response*. Washington, DC: Council of Chief State School Officers.

Massachusetts Institute for Technology (1990). *Education that works: An action plan for the education of minorities*. Cambridge, MA: MIT.

McKnight, C. et al. (1987). *The underachieving curriculum: Assessing U.S. school mathematics from an international perspective*. Champaign, IL: Stipes.

McPartland, J. & Slavin, R. (1990). *Policy perspectives: Increasing achievement of at-risk students at each grade level*. Washington, DC.: U.S. Government Printing Office.

Moll, L. C. (1988). Key issues in teaching Latino students. *Language Arts, 65*(5), 465-472.

Moll, L. C. & Greenberg, J. (1990). Creating zones of possibilities: Combining social contexts for instruction. In L. C. Moll (Ed.), *Vygotsky and education*. Cambridge: Cambridge University Press.

Moll, L.C., Vélez-Ibáñez, C. & Greenberg, J. (1989a). *Classroom observations. Report of the project Community Knowledge and Classroom Practice: Combining Resources for Literacy Instruction*. Tucson, AZ: University of Arizona, College of Education and Bureau of Applied Research in Anthropology.

Moll, L.C., Vélez-Ibáñez, C. & Greenberg, J. (1989b). *Fieldwork Summary. Report of the project Community Knowledge and Classroom Practice: Combining Resources for Literacy Instruction*. Tucson, AZ: University of Arizona, College of Education and Bureau of Applied Research in Anthropology.

Moll, L.C., Vélez-Ibáñez, C. & Greenberg, J. (1989c). *Year one progress report. Community knowledge and classroom practice: Combining resources for literacy instruction*. Unpublished Manuscript. Tucson, AZ: University of Arizona, College of Education and Bureau of Applied Research in Anthropology.

Moll, L., Vélez-Ibáñez, C. & Greenberg, J. (1990). *Community knowledge and classroom practice: Combining resources for literacy instruction* (Final Technical Report, Innovative Approaches Research Project). Arlington, VA: Development Associates, Inc.

Mullis I. & Jenkins L. (1988). The *science report card.* Princeton: National Assessment of Educational Progress.

Oakes, J. (1986). Why schools don't change: Tracking, inequality, and the rhetoric of school reform. *Journal of Education, 168,* 61-80.

Oakes, J. (1990). *Multiplying inequalities: The effects of race, social class, and tracking on opportunities to learn mathematics and science.* Santa Monica, CA: Rand Corporation.

Olson, D. R. (1987). An introduction to understanding literacy. *Interchange, 18*(1/2), 1-8.

Ortiz, A., Wilkinson, C. & Robertson-Courtney, P. (1990). *AIM for the BESt: Assessment and intervention Model for the bilingual exceptional student.* A Handbook for Teachers and Planners from the Innovative Approaches Research Project. Arlington, VA: Development Associates, Inc.

Ortiz, A., Wilkinson, C., Robertson-Courtney, P. & Bergman, A. (1990). *AIM for the BESt: Assessment and intervention model for the bilingual exceptional student* (Final Technical Report, Innovative Approaches Research Project). Arlington, VA: Development Associates, Inc.

Resnick, L. (1990). Literacy in school and out. *Daedalus, 119*(2), 169-185.

Rivera, C. (1990). *IARP project, purposes, and approaches* (Final Performance Report, Innovative Approaches Research Project). Arlington, VA: Development Associates, Inc.

Rivera, C. & Zehler, A. (1990). *Assuring the academic success of language minority students: Collaboration in teaching and learning.* (1990). Arlington, VA: Development Associates, Inc.

Robledo, C., Cárdenas, J., García, Y., Montemayor, A., Ramos, M. Supik, J. & Villarreal, A. (1990). *Partners for Valued Youth: Dropout prevention strategies for at-risk language minority students* (Final Technical Report, Innovative Approaches Research Project). Arlington, VA: Development Associates, Inc.

Robledo, C., Cárdenas, J., García, Y., Montemayor, A., Ramos, M. Supik, J. & Villarreal, A. (1990). *Partners for Valued Youth: Dropout prevention strategies for at-risk language minority students.* A Handbook for Teachers and Planners from the Innovative Approaches Research Project. Arlington, VA: Development Associates, Inc.

Sarason, S. B. (1982). *The culture of the school and the problem of change* (2nd ed.). Boston: Allyn & Bacon.

Solis, A. (1988). Planning for cooperative learning. *Classroom practices bulletin. 2*(1), Southwest Educational Development Laboratory, 1-3.

Spring, J. (1989). *The sorting machine revisited: National education policy since 1945.* New York: Longman.

Steen, L. (1987). Mathematics education: A predictor of scientific competitiveness. *Science, 237,* 251-252 & 302.

Steinberg, L., Blinde, P. L. & Chan, K. (1982). Dropping out among minority youth. *Review of Educational Research, 54*(1), 113-132.

Margin Notes

Tharp, R. & Gallimore, R. (1989). *Rousing minds to life: Teaching, learning, and schooling in social context*. Cambridge: Cambridge University Press.

Tikunoff, W.J., et al. (1981). *Review of the literature for a descriptive study of significant bilingual instructional features*. San Francisco, CA: Far West Laboratory for Educational Research and Development.

U.S. Equal Employment Opportunity Commission (1986). *Project 2000: Job and training opportunities for minorities and women*. Washington, DC: U.S. Equal Employment Opportunity Commission.

Vélez-Ibáñez, C. G. (1988). Networks of exchange among Mexicans in the U.S. and Mexico: Local level mediating responses to national and international transformations. *Urban Anthropology, 17*(1), 27-51.

Warren, B., Rosebery, A. & Conant, F. (1990). *Cheche Konnen: Collaborative scientific inquiry in language minority classrooms* (Final Technical Report, Innovative Approaches Research Project). Arlington, VA: Development Associates, Inc.

Warren, B., Rosebery, A., Conant, F. & Hudicourt-Barnes, J. (1990). *Cheche Konnen: Collaborative scientific inquiry in language minority classrooms*. A Handbook for Teachers and Planners from the Innovative Approaches Research Project. Arlington, VA: Development Associates, Inc.

Wallace, C. (1989). Participatory approaches to literacy with bilingual adult learners. *Language Issues, 3*(1), 6-11.

Appendice

Domains of Knowledge in the Community

Domains of Knowledge in the Community

Analysis of the funds of knowledge in the community revealed very broad clusters of information.

Agriculture and Mining

Ranching and Farming
- Horsemanship (cowboys)
- Animal husbandry
- Soil and irrigation systems
- Weather and climate
- Crop and vegetable planting
- Veterinary medicine
- Pests - e.g. mice, crickets, cockroaches (insects)
- Domesticated and wild animals
- Hunting, tracking, dressing
- Curing, tanning
- Fishing

Mining
- Timbering
- Minerals
- Assaying
- Blasting
- Equipment operation and maintenance

Arts, Folkore and Music

Music
- Composition (for mastitis with crickets)
- Instrumental (guitars, violins)
- Vocal (sight reading, chero songs, writing music, lyrics)
  (memory, fractions, tempo, rhythm, harmony, melody, recognition)
- Orchestration
- Band organization
- Cheros

Border Lore

Economic and Strategic Information

Business
- Real estate (renting and selling)
- Market values
- Appraising
- Contracting
- Loans
- Mortgages
- Property management
- Institutional familiarity
- Credit checks
- Marketing labor laws
- Organization of production (construction)
- Building codes
- Accounting
- Federal regulations
- Computational skills
- Literacy skills
- Sales (candies, bicycles)

Education

- Parents assist with homework
- Formal and informal
- Job training
- Musical training
- Religious training
- Learning by example and observation (mechanics)
- Ranching and farming as school
- Computational skills
- Measurement skills
- Reading of manuals, *National Geographic*, *Time*, *Newsweek*, history books, blueprints, *Life*, encyclopedias, *Good Housekeeping*, bills, catalogues, self-improvement books, shopping lists, business literature, contracts, school assignments, etc.)
- Listening and observational skills
- Poetics

Medicine

- Contemporary medicine
  - Drugs
  - First aid procedures
  - Anatomy
  - Medical systems and practitioners
  - Midwifery
- Folk Medicine
  - Folk veterinary medicine
  - Folk cures, e.g. for asthma
  - Herbal knowledge
  - Diagnostics
- Knowledge of anatomy and biology of animals
  - Kinds and classes of animals
  - Kinds and classes of plants
  - Kinds and classes of herb mixes

Household Management

- Budgets
- Childcare
  - Children caring for children
  - Children playing at childcare
  - Adult childcare as part of adult caretakers by child
  - Household chores, e.g. cooking, cleaning, mending, yardwork
  - Appliance repair (refrigerators and washing machines)

Material and Scientific Knowledge

Consruction
- Carpentry
- Reading blueprints
- Roofing
- Masonry (bricklaying)
- Plumbing
- Building fences (chain link)
- Electrical
- Coolers and heating installation
- T.V. cable installation
- Appliances
- Painting exterior and interior
- Plastering implements
- Design and architecture
- Estimates of materials and calculating costs
- Fences
- Measurement skills and leveling estimates for sewer
- Building codes
- City codes
- Planning work site
- Assembly of labor
- Management skills

Bicycle shop and go-kart builder

Welding knowledge

Repair
- Airplane
- Automobile
- House maintenance
- Plumbing (toilets)
- Bicycle
- Heating and air conditioning
- Tractor

Rituals and Religion

Catechism
- Bible reading
- Baptism
- First Communion
- Weddings
- Funerals
- Liturgical knowledge, e.g. Mass

Moral knowledge and ethics

Cosmic information

Quinceañeras

Social Networks

Visits
Child exchange and care
Household support or management (paying bills, smart consumer, exchange budgets, etc.)
Institutional knowledge
  School
  INS, welfare, church, banks
  Learning limits of expected utilities, hospitals, etc.
Moral support (advice)
Interpersonal skills
Conflict mediation
Caring for the sick, the elderly
Maintaining social networks
Networks as communication system
  Brokerage system (children facing the institutions as interpreters)
    Child/adult relations: "respeto"
    Recognizing the flexible social boundaries outside immediate house hold: trust, reciprocity, etc.
Qualitative role playing (in dense networks with more persons with greater opportunities for response and for conlict)